tracerplus Desktop

USER GUIDE

Mobile App Development Tool for Android, iOS and Windows

TracerPlus Desktop Version 10.7
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TracerPlus™ Desktop

User Guide

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Version 10.7
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TracerPlus™ Desktop

Design and Deployment Tool
For TracerPlus Android, iOS and Windows

User Guide

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Chapter 1: TracerPlus Desktop Introduction

1.1   Introduction

TracerPlus Desktop is a free mobile application design tool that makes it easy for users of any skill level to design mobile data collection forms for Android, iOS and Windows handhelds, smart phones, tablets, and barcode/RFID terminals.

1.2   Common TracerPlus Applications

TracerPlus Desktop makes it simple for programmers and non-programmers to create a wide variety of enterprise class mobile applications. Features including image capture, wireless syncing, mobile printing and barcode/RFID data capture give users limitless possibilities when designing mobile applications. For a full list of features visit the TracerPlus Feature Matrix.

Common TracerPlus Applications Include:

- Inventory Management
- Fixed Asset Tracking
- Mobile Inspections
- Route Accounting
- Attendance/Event Tracking
- Equipment Check In /Check Out
- Mobile Sales
- RFID Item Locating (Geiger)
- RFID Room Scans

1.3   TracerPlus Architecture

TracerPlus Desktop also includes the installation and download information for the **TracerPlus Client** and information for installing **TracerPlus Connect**. All of these products can be trialed at no cost. When all three products are used together, mobile projects can be completed in 3 easy steps.

1) Download **TracerPlus Desktop** to begin designing mobile applications**.**
2) Configure data syncing between your **TracerPlus Desktop** project and your data using **TracerPlus Connect**.

Note: TracerPlus does support simple text file import/export without the additional purchase of **TracerPlus Connect**. However, **TracerPlus Connect** is highly recommended for syncing to and from your **ODBC**, **Text**, or **Excel** data sources due to its more flexible configuration options.

3) When testing is complete, deploy your solution to your licensed mobile workforce.

1.4 What's New in TracerPlus 10

Many new features and GUI enhancements are introduced for both **TracerPlus Desktop** and the **TracerPlus Mobile Client**. For a complete list of features refer to the TracerPlus Feature Matrix.

- Support for iOS devices, Windows based PCs and Tablets (10.2)
- Monthly/Yearly Subscription plans now available (10.2)
- Zebra RFID RFD8500 support for Android and iOS
- Zebra TC20/RFD2000 RFID Sled Integration
- Zebra MC3300xR RFID Integration (10.4)
- Zebra TC21/TC26 and RFD40/RFD90 Integration (10.5)
- Support for TSL RFID and Barcode scanners on Android and iOS (10.6)
- Honeywell IH25/40 RFID scanners for Android (10.6.1)
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- Support for barcode scanner peripherals from Socket Mobile (10.7)
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- QR Code scanning for project deployment
- Scan for and parse iBeacon, and Eddystone BLE beacons (10.2)
- Scan to Connect for device pairing in iOS (10.5)
- Performance enhancements and bug fixes

1.5 PTS Services

TracerPlus trial and registered users have a wide variety of support resources available to them. This includes online tools, videos/FAQs, and even phone support for more immediate or detailed needs.

PTS offers Comprehensive Support Agreements, including phone support and free software upgrades during the active period of the support plan. One and three year plans are available. For more information, contact your authorized reseller or PTS directly.

Additional Support and Educational References are available in the Support area of TracerPlus.com.

1.6 TracerPlus Solution Center

As a service to our users, PTS offers free pre-built TracerPlus projects for a wide variety of specific applications. These projects can be modified to fit your exact needs or used as is. For a listing of available projects, visit the Solution Center on the web or from the **TracerPlus Desktop** Welcome screen.

Chapter 2: Installation

This chapter details the **TracerPlus Desktop** and **TracerPlus Client** installation requirements and processes.

2.1   TracerPlus Desktop System Requirements

- Windows 7 and newer.
- Microsoft .NET Framework 4.8 or greater (You will be prompted for install if required).

2.2   System Requirements for the TracerPlus Client

- **Android**
  - Android OS 7.1 and greater.
  - Wi-Fi, WAN or Ethernet access for data syncing (if using **TracerPlus Connect**).

- **iOS**
  - iOS 9.0 or greater.
  - Wi-Fi, WAN or Ethernet access for data syncing (if using **TracerPlus Connect**).
  - Wi-Fi, WAN or Ethernet access for project deployment.

- **Windows PC**
  - Windows 7 or Greater.
  - Microsoft .NET Framework 4.8 or Greater.
  - Wi-Fi, WAN or Ethernet access for data syncing (if using **TracerPlus Connect**).

2.3   Installation

1. Download TracerPlus Desktop.
2. Double-click the downloaded **tracerplus_desktop.exe** to begin the installation.
3. Follow the installation prompts.

2.3.1   Installing the TracerPlus Client

- Navigate to the **Tools→Install TracerPlus to Device** menu option in **TracerPlus Desktop**.
- Select the appropriate device platform.
- Follow the on-screen instructions provided.

2.4   Removing TracerPlus

2.4.1   Removing TracerPlus Desktop

1. Open the Add/Remove Programs feature in MS Windows via control panel.
2. Select **TracerPlus Desktop 10** and click the "Remove" button.

2.4.2   Removing the TracerPlus Client

- **Android**

1. Navigate to Settings→Apps.
2. Select **TracerPlus** and click Uninstall.

- **iOS**
    1. Click and hold on the application icon.
    2. When the icon is shaking click the x icon that appears.

- **Windows PC**
    1. Open the Add/Remove Programs feature in MS Windows via control panel.
    2. Select **TracerPlus PC 10** and click the "Remove" button.

Chapter 3: Getting Started

This chapter outlines how to get started with **TracerPlus Desktop** but does not get into detail on specific TracerPlus features. To start, we should define some terms used.

Definitions:

Project – A file that can be deployed to the **TracerPlus Mobile Client**, consisting of a session or multiple sessions, that can be used dependently or independently to perform mobile tasks.

Session – A mobile data entry form with a related data table or a stand-alone table used for storing and sharing data with other sessions. TracerPlus supports up to 32 sessions in a single project.

To quickly get started using **TracerPlus Desktop**, a new user can:

- Select a pre-built application from the TracerPlus Solution Center.
- Create a new project from scratch.
- Open an existing project.
- Import a project from another source.

3.1   TracerPlus Solution Center Project

From the TracerPlus Welcome screen, follow the instructions below to quickly load a TracerPlus sample project.

1. In the **Welcome Screen** click the **Samples** button.
2. Use the **Search** or the **Category List** to browse the different projects.
3. Click the **Select** button to view Project screen shots and project descriptions.
4. Click the **Next** button to select the sample you wish to import.
5. Modify the **Project Name** and **Save To** fields, then select **Import**.
6. When complete you will be taken to the **Project Properties** screen.
7. The project is now ready for deployment to a device or for further modification if required. Refer to Section 3.5 for immediate deployment options.

3.2   Create New Project

To create a New Project, follow these steps.

1. In the **Welcome Screen** click the **New Project** button.
2. Enter a **Name** and **Location** to save your project or use the default.
3. Click the **Create Session** button to add a new session to your project. One session is added to your project automatically with the creation of a new project.
4. Click the tab for your new session or select it from the **Project Explorer** menu.

3.3   Opening an existing Project

To open an existing project, follow these steps.

1. Click **File➔Open**.
2. Locate the project file you wish to open (*.tpp file).

3.4   Importing a Project

To import an existing project, follow these steps.

1. Click **File➔Import**.
2. Locate the project file you wish to import (*.tpe file).

3.5   Deploying to a Mobile Device

Once your form is designed, click the **Build/Deploy** button to turn your project into a newly configured mobile application. Chapter 7 focuses on some of the options you have when deploying your project.

3.6   Adding to a Project

You can add an existing project to your current project by using the **File➔Add** menu option. Choose the project you wish to add and it will be appended to the end of the currently opened project. This is useful for combining projects.

Chapter 4: Project Properties

Project Properties are used to define project level options and settings. These include **Project Settings**, **Admin**, **Launcher** and **Connect** options.

4.1   Project Settings
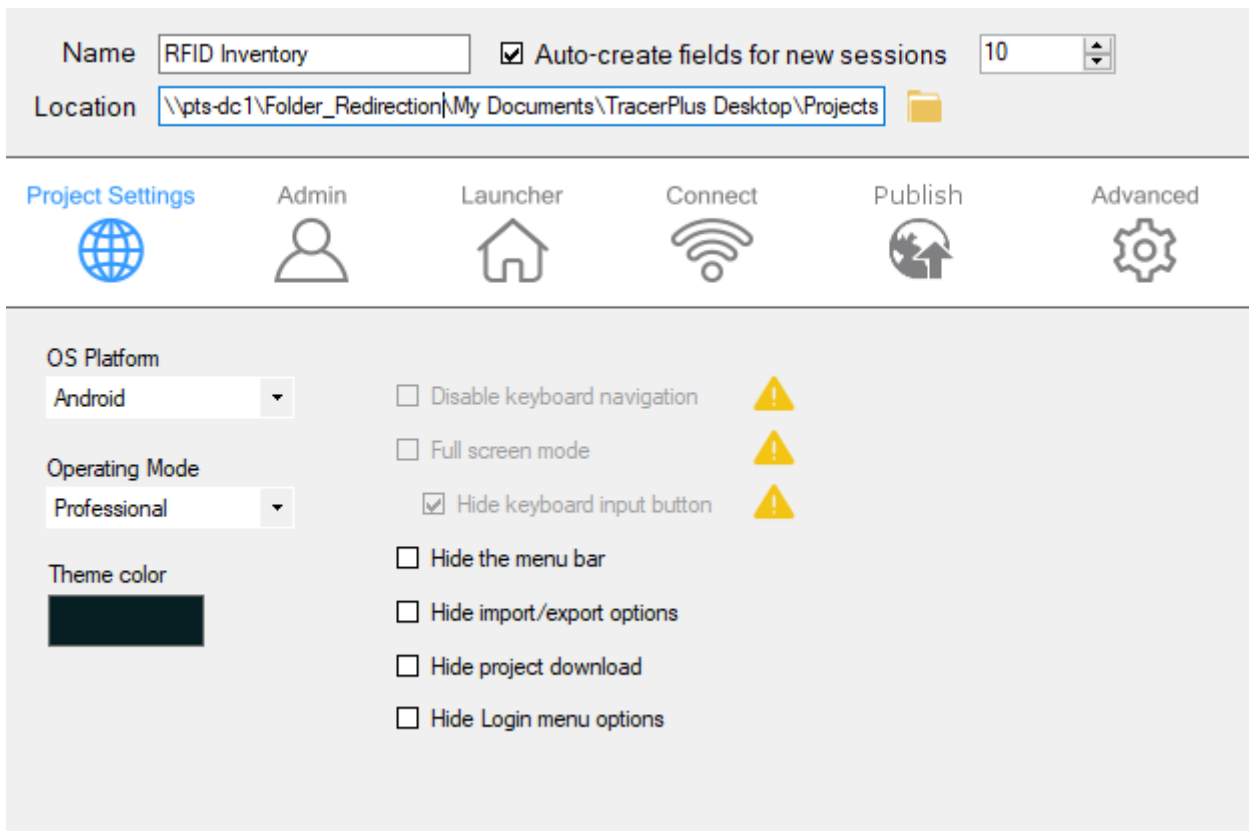
Name
Enter a name for the project. The **File→Save As** menu can also be used to change the name of a project.

Auto create fields for new sessions
Enable this option to auto create a desired number of fields instead of manually adding them to any newly created session.

Location
Select the location on the PC where the project is to be saved.

OS Platform
Select the operating system platform for this project. This platform selection can also be changed from the **Tools→Build/Deploy** window.

Chapter 4: Project Properties

> **Note:** The default operating system (OS) for any new project can be set via the **View→Preferences** menu option.

Operating mode
Select the mode (Standard or Professional) of TracerPlus you have purchased or wish to trial. The TracerPlus Feature Matrix details the difference between these modes.

Hide the Menu Bar
Check this option to hide the TracerPlus menu bar on the mobile device.

Hide import/export options
Check this option to hide the Import and Export functions in the TracerPlus menu bar on the mobile device.

Hide project download
Check this option to hide the Project Download function in the TracerPlus menu bar on the mobile device.

Hide Login menu options
Check this option to hide the menu option on the TracerPlus Login screen.

Theme Color (Android, iOS and PC only)
Specifies the background color of many different items on the mobile device. Background colors, dialog headers, and different UI elements on the mobile device will be colored by this selection.

4.2   Admin Settings

Select the **Admin** option from the Project properties to set passwords and user login options for the **TracerPlus Client**.

Use Admin Passwords
When checked, the user is prompted to enter a password when attempting to perform specific TracerPlus functions. This differs from the password entered in the **Manage Users** window in that these control access to specific tasks while the previous password setting provided access to TracerPlus itself. The five items you can password protect are **Delete one record, Delete all records**, **Edit records**, **Session Settings, Field Settings, User Login Sync,** and **Download Project**.

Inactivity timeout
When checked, the **Inactivity timeout** value causes TracerPlus to return to the home screen after the specified time period has elapsed with no user activity. If **Require Login** is enabled, TracerPlus returns to the user login form.

> **Minutes**
> Use the **Minutes** field to specify number of minutes before an inactivity timeout.

> **Seconds**
> Use the **Seconds** field to specify the number of seconds before an inactivity timeout.

Require login
When checked and fully configured, users are required to log in after launching TracerPlus. Login IDs can allow or limit access to specific TracerPlus sessions. The configuration of users and their access levels are accomplished in Section 4.2.1 and Section 4.2.2 below.

Clear user name after login
When checked, this option clears the user name after login.

Authentication type
Select the type of Login Authentication you would like to enforce. Options available are **StaticList** and **SourceSession** and are defined in Section 4.2.1 and Section 4.2.2 below.

Show sync button
When enabled, a sync button is displayed on the user login prompt. This is useful for allowing a user list to be synchronized from a TracerPlus Connect server to download a new list of users.

> **Host ID**
> The **Host ID** identifies which host is used for the sync of users. The **Host ID** refers to the ID as configured in the Hosts Tab.

> **Profile ID**
> The **Profile ID** refers to the profile configured in **TracerPlus Connect** that will be synchronized when the user login Sync button is clicked. Refer to the **TracerPlus Connect** User Guide for more information on how to configure a sync profile.

Auto sync on login
When enabled, a sync can be triggered upon login to TracerPlus. This is useful for allowing list items to be synchronized from a TracerPlus Connect server to download the most up to data on login. This setting uses the Host ID and Profile ID defined above.

4.2.1   Validate Users From This List option (StaticList)

When you choose this option, users are created and managed directly from the grid control on this screen. This section allows you to manage users and their specific privileges. User passwords can also be set here.

- **Add:** Add a new user to the list.
- **Remove**: Delete the selected user from the list.
- **Clear All**: Delete all users from the list.
- **Add from File:** Browse for an existing .tsc file to import an existing users list. This is helpful for previous users of TracerPlus who may already have login profiles.

User Name/Password Fields
Enter the name or nickname of the user here along with the associated password.

Available Sessions/Selected Sessions
To enable a particular session for the selected user, highlight it in the **Available Sessions** column and click the **>** button. To remove a previously added session for the selected user, highlight it in the **Selected Sessions** column and click the **<** button. In order to add or remove *all* available sessions, click the **>>** or **<<** buttons respectively.

4.2.2   Validate Users From External Session option (SourceSession)

When you choose this option, users are validated against a selected TracerPlus Session. Additionally, you must configure which data fields of that session to assign to the different properties involving the User Login.

- **Session –** This is the session to use for referencing/validating the entered login info.
- **Username field –** The field to compare against the entered username.
- **Password field –** The field to compare against the entered password.
- **Accessible Sessions Field –** The field to use to set Available sessions for a given user. The data stored in this field must use a "1" to represent an accessible session or a "0" for an inaccessible session. For example, a string of "10011000000000000000000000000000" would indicate that the user is allowed to access Session1, Session 4, and Session 5 of your project. This string can be a maximum of 32 characters representing the maximum number of sessions allowed in a TracerPlus project. If this string is shorter than 32, the remaining sessions are considered *accessible* for this user.
- **Logged In Status Field –** The field to use to write the current logged in status of a given user represented as "1" for logged in and "0" for logged out.

4.3   Launcher Settings

Launcher settings allow the modification of the tabs presented on the **TracerPlus** launcher (home) screen. The default launcher enables two tabs; **Data Entry** and **View Data**.
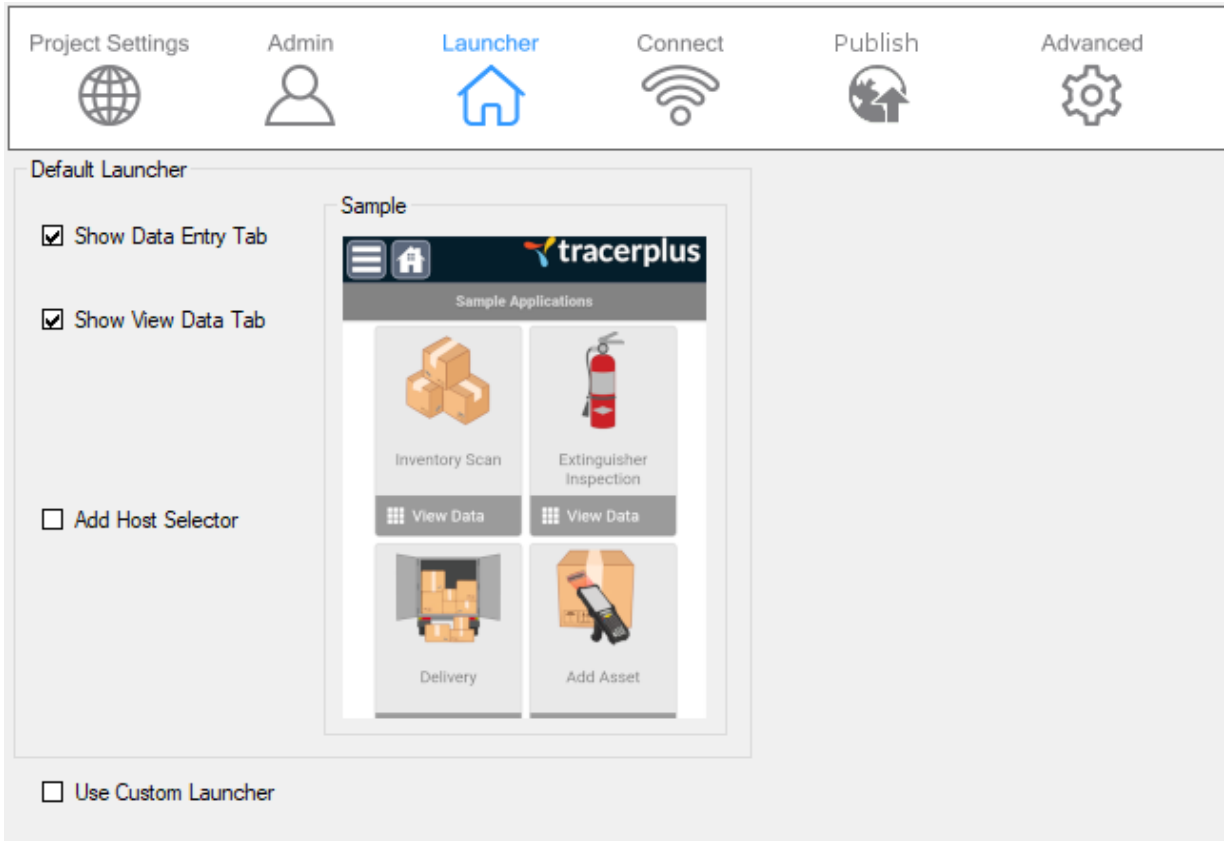
Show Data Entry Tab
When checked, the **Data Entry** tab is displayed on the TracerPlus Launcher screen. This tab contains sessions that are marked as enabled in **TracerPlus Desktop** and provides access to the **Data Entry** form for the clicked session.

Show View Data Tab
When checked, the **View Data** tab is displayed on the TracerPlus Launcher screen. This tab contains sessions that are marked as enabled in **TracerPlus Desktop** and provides access to the **View Data** grid for the clicked session.

Add Host Selector
When checked, a new icon will appear on the Launcher screen allowing you to modify the Host address that is used for syncing data with TracerPlus Connect.

Use Custom Launcher
When checked, the user can place a modified **Launcher.tac** file in the Project's ***ProjectName*\ProjectFiles\SystemInfo\Skins** folder overwriting the existing file. Once deployed, this custom launcher will override the default Launcher used by TracerPlus.

4.4 Connect Settings

TracerPlus projects can be configured to share data seamlessly with pre-existing data sources via **TracerPlus Connect. TracerPlus Connect** is an all-in-one solution that allows for both wireless and batch syncing of data to and from a wide range of data sources, including MySQL, SQL, Oracle, Microsoft Access, Microsoft Excel, text files and many other ODBC compliant databases. For more info on **TracerPlus Connect**, visit our website at TracerPlus.com.
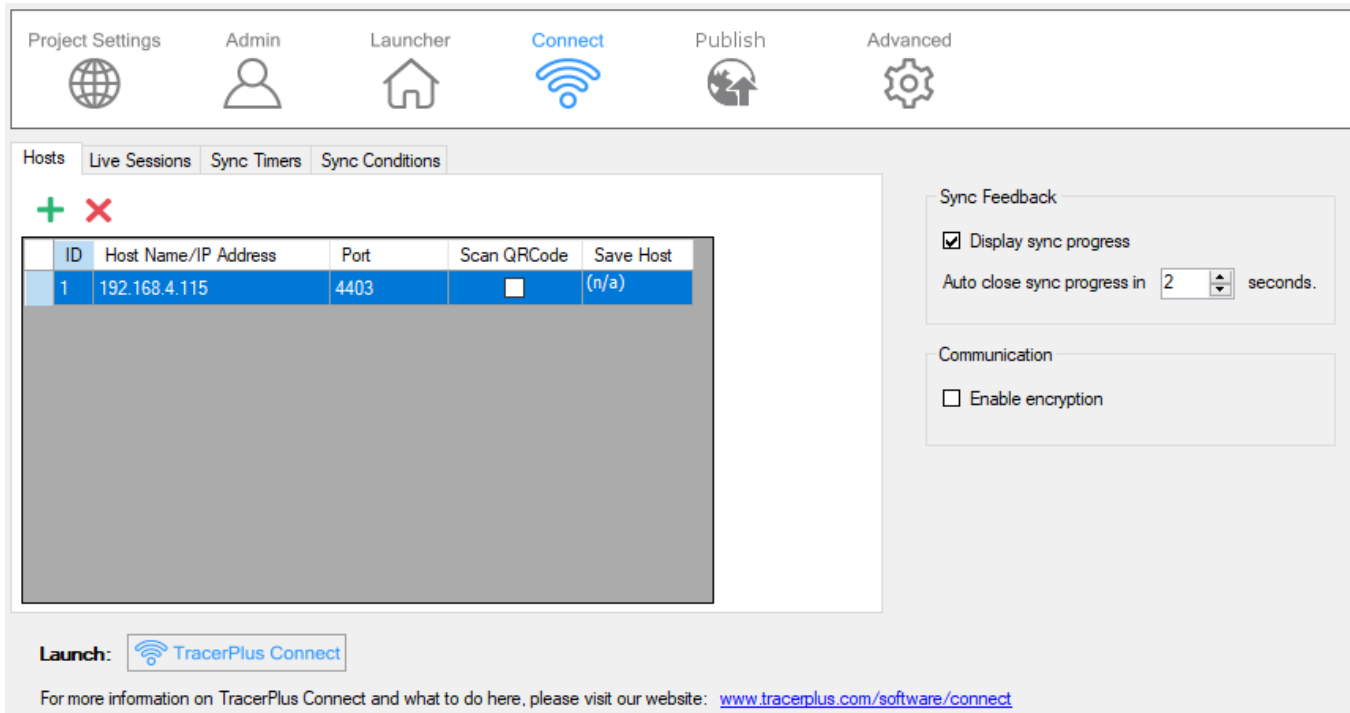
4.4.1 Hosts

The Host is a PC or server running **TracerPlus Connect**. This is the PC that the **TracerPlus Mobile Client** communicates with when syncing data. Multiple hosts can be configured here in the event that data needs to be retrieved or sent from multiple locations.

- **ID** – The ID is a sequential value automatically assigned to identify the host. This ID is used when referenced in other areas of your **TracerPlus Desktop** project.
- **Host Name/IP Address** – The Host Name is the network address of the PC running **TracerPlus Connect**. This value can either be the literal IP address or the network name of the PC.
- **Port** – The **Port** setting identifies which network port **TracerPlus Connect** is using. The default port is **4403,** or **4404** if the host is running as a Windows Service.
- **Scan QRCode** – When enabled, any sync button configured for the selected **Host ID** will prompt the user to scan a **TracerPlus Connect** QR Code. This QR code can be found above the **Profile Explorer**, or by using the Task menu of the **TracerPlus Connect** application.
- **Save Host** – When enabled, the QR Code that is scanned to initiate a sync will be saved so that the next time a user clicks this sync button they will not be prompted to scan a **TracerPlus**

Connect QR Code. **Note:** When this is enabled, a QR code icon will be present on the sync button, allowing for forcing a scan of a new QR Code to initiate a sync.

4.4.2   Live Sessions

Live Sessions allow the application to communicate with the **TracerPlus Connect** server in real time. Any new records, deleted records or edited data gets applied immediately to the data source if a wireless connection is available. If no wireless connection is available, the data is stored locally on the mobile device until a wireless connection becomes available.

- **Enabled –** This option enables the live session for use.
- **Session –** This value is used to select which session from your project should use live data. If there are multiple sessions in your project, each session can be individually added as your application requires.
- **Host ID –** The Host ID refers to the ID as configured in the Hosts Tab.
- **Profile ID –** The Profile ID refers to the live profile ID configured in **TracerPlus Connect**. Refer to the **TracerPlus Connect** User Guide for more information on how to configure a live profile.

4.4.3   Sync Timers

Sync Timers allow setting of the time period at which a given device sends or receives data without mobile user interaction. The timer starts when TracerPlus is first opened and resets when TracerPlus is closed on the mobile device.

- **Enabled –** When enabled, this timer is active whenever TracerPlus is running on the device.
- **Interval –** The Interval defines how often this sync timer triggers while TracerPlus is running**.** This value is measured in seconds.
- **Host ID –** The **Host ID** identifies which host is used for the sync initiated by the timer. The **Host ID** refers to the ID as configured in the Hosts Tab.
- **Profile ID –** The **Profile ID** identifies which **TracerPlus Connect** profile should be used for the sync initiated by the timer. Refer to the **TracerPlus Connect** User Guide for more information on how to configure a **TracerPlus Connect** profile.

4.4.4   Sync Conditions

Sync Conditions define the conditions that need to be met to allow a synchronization to occur. Three condition types can be set, **DateTime, Database Count and Notification.** The first two condition types are used to control either a **Timed Sync** or a sync initiated by a **DoSync** button action. The last, the Notification condition is used to initiate a sync when a device is attached to an active USB connection. Each condition must have a **Profile ID** set to reference the **Profile ID** in Connect this condition applies to.

DateTime Condition
The **DateTime** condition enables a sync to only run before or after the specified time. If a specific window of time is required, that can be accomplished by using two unique **DateTime** Conditions; one specifying the earliest start time (**After**) and one specifying the latest start time (**Before**).

Before/After
Select whether the time evaluation should be before or after the specified time.

Time
Enter the time to use in this evaluation.

Message
A custom message to display when a sync condition fails and the sync will not run.

Database Count Condition
The **Database Count** Condition controls when a synchronization can occur based on a session record count.

Session
Select the project session to use for the record count evaluation.

Records
Select the operator to use for the record count evaluation.

Value
Select the value for the record count evaluation.

Message
A custom message to display when a sync condition fails and the sync will not run.

4.4.5   Sync Feedback

Sync Feedback allows users to enable the Sync Progress dialog on the **TracerPlus Mobile Client**.

Display Sync Progress
Check **Display Sync Progress** to enable the displaying of a syncing progress dialog.

Auto close sync progress in
The amount of time the sync progress window remains open after a completed sync. After a successful sync the user can also select the **Close** button. Setting this to "**0**" forces the user to close the sync dialog.

4.5 Publisher Settings (Android Only)

Publisher settings allow a TracerPlus Developer to create a customized version of a TracerPlus Desktop project as their own. A developer's unique project can be packaged into an installable file and branded with their own company and contact information.

To unlock the Publisher Settings, a license of TracerPlus Desktop Publisher must be purchased. Please contact your sales rep or reseller to purchase TracerPlus Desktop Publisher Edition.

Company Info

Company Specific information about the published application.

Author

Used to specify the creator of the project. This value will also be displayed when the project is imported from the Import Project dialog.

Company

Specifies the company that created the project. This value will show up on the Splash and About screens on the mobile device.

Website

The web address of the company that created the current project. This will be displayed on the Splash and About screens on the mobile device.

Email

The Email address of the company that created the project. This will be displayed on the Splash and About screens on the mobile device.

Save As Defaults

Save the **Company Info** settings so on the next Publisher project the defaults are used for the **Company Info** settings.

Shortcut

The text that is displayed on the device underneath the icon to open the application.

Application Name
The name of the application deployed to the mobile device. Depending on the mobile device's operating system this will be displayed in different spots. Typically, in the Add/Remove programs listing, and when the application is open in the Window Frame of the application.

Launcher Image
Allows the developer to change the top banner image displayed on the launcher page.
Android recommended image size: 540 × 90

Company Logo
Allows the developer to change the company logo displayed on the About screen and the splash screen.
Android recommended image size: 320 × 255
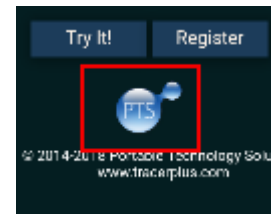
Application Image
Allows the developer to change the application image displayed on the splash screen.
Android recommended image size: 540 × 648

Application Icon
Allows the developer to change the icon displayed in the Android application drawer.
Android recommended image size: 512 × 512
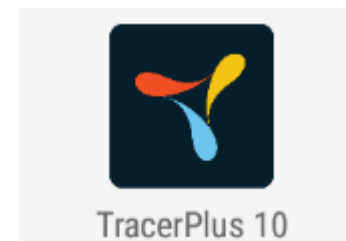
Product ID
Create a unique 4-digit alphanumeric product code that requires different applications to use unique licenses.

Project Version
A developer selectable number to indicate the version of the project. This value is displayed on the About screen on the mobile device and is used for debugging purposes.

Project Revision
A developer selectable revision to indicate the version of the project. This value is displayed on the About screen on the mobile device and is used for debugging purposes. In order to properly upgrade on Android and post to the Play Store, the version number must be greater than the project's last used Revision number.

Save revision
When enabled, a backup copy of the project is saved every time the revision value changes. This allows a developer to revert to an earlier revision if required. These revision copies are saved in the project's save path in a sub folder called Revisions.

Comment
A developer field for adding a description or other value to the Publisher settings.

Build your application
The Build your application settings are used to create the installer package for the current project. When creating an install package for an Android based device, an .apk package can be built which can be installed directly onto an Android device, or an .aab package can be built for upload to the Google Play Store. To build the package select the OS desired and click **Create Installer**.

4.6 Advanced

4.6.1   Reader Parameters

Configure select Reader Parameters to modify how the built-in barcode scanner behaves for Zebra devices, and to also enable/disable supported Barcode and RFID add-on peripherals. You can reference Zebra's DataWedge guide for detailed info on the settings available for Zebra devices or use the property grid to see descriptions for each property of the different device types.

4.6.2   Symbologies (Zebra Only)

Configure symbology specific settings for select barcode fonts. To configure a specific symbology, select it from the list, enable the **Override Defaults** check box and modify the settings as needed.

Chapter 5: Session Settings

A TracerPlus session is a mobile data entry form with a related data table or a stand-alone table used for storing and sharing data with other sessions. TracerPlus supports up to 32 sessions in a single project. In the **Project Explorer,** select the session you wish to configure, or click the **Add** button to create a new session.

Session Name

Specify a name for the session created. This will be seen on the launcher, data entry and view data screens to reference this session.

Session Icon

The image button next to the **Session Name** setting, clicking this will allow you to specify an image to use in place of the defaults for the session icon that allows access to the session entry form.

5.1 Field Settings

After a session is created, fields should be configured via the **Field Settings** tab. Available settings are **General**, **After Scan**, **Validation**, **Variable**, **Lookup Options**, **Drop Down, Radio Button** and **Calculated Options**.

5.1.1   Field Settings Toolbar

Use the Field Settings Toolbar to add new fields, remove fields, and change field order.

- **Add –** Click the **Add** button to add a new field to the current session.
- **Remove –** Click the **Remove** button to remove the selected field from the session.
- **Insert –** Click the **Insert** button to insert a new field before the currently selected field.
- **Up –** Click the **Up** button to move the selected field up by one.
- **Down –** Click the **Down** button to move the selected field down by one.
- **Import –** Click the **Import** button to import the field list from a data source such as an ODBC table, Excel Spreadsheet, or text file. For further information review

5.1.1.1 Importing a Field List

A list of fields can be imported directly into TracerPlus Desktop from a user selected data source. These data source can include an ODBC database table, Excel Spreadsheet, or text file. In the case of an Excel spreadsheet or text file the field list will come from one of the rows of data within the data source. Please note that importing a field list will clear any fields already configured.

Data Provider
The type of data source used in the import process. Can be ODBC, Excel, or Text.

ODBC
Select ODBC to import the field list from a database table

> **Data Source**
> The database to be used in the import process.
>
> **Schema** (optional)
> The schema within the database to be used for the import process.
>
> **Username**
> The **username** of the selected database.
>
> **Password**
> The **Password** for the user.
>
> **Table**
> The **Table** to be used in the import process.

Excel
Select Excel to import the field list from a Microsoft Excel worksheet.

> **Workbook**
> Use the workbook field to select the Microsoft Excel workbook used in the import process. Use the File Open button to navigate to the desired workbook.

Worksheet
The worksheet within the selected workbook to use in the import process.

Start Row
The row within the worksheet that contains the list of field names to import.

Text File
Select the Text option to import the field list from a text file.

Select Folder
Use the Select Folder field to navigate to the folder that contains the text file to be used in the import process. Use the Folder button to navigate to the desired folder.

Filename
The filename of the text file to be used in the import process.

Start Row
The row within the text file that contains the list of field names to import.

5.1.2 General Settings

General Field Settings allow the user to define basic field attributes of the selected field.

Name
Enter the name of the field.

Field Type
Set the **Field Type** based on the type of data being collected or presented. Available field types are shown below.

Text
Text fields can display alpha-numeric characters, and should be used for keyboard, barcode, RFID, MSR, or other forms of input.

Dropdown
Dropdown fields allow the user to select from a pre-defined list of items. When a field is set to **Dropdown**, a **Dropdown Options** tab appears allowing additional configuration. More information on how to configure a **Dropdown** can be found in 5.1.6 Drop Down Options.

Checkbox
Checkbox fields are used when simple Yes/No, True/False or On/Off selections are needed.

Variable
Variable fields auto populate based on the selected variable type. More information about variable options can be found in 5.1.7 Variable Options.

Signature (Professional Version Only)
When a field is set as a Signature, a pop-up **Signature** window opens whenever the field is selected.

Dimensions (Android, iOS and PC Only)
Customize the height and width of the signature popup in pixels.

Calculated (Professional Version Only)
A **Calculated** field records values from mathematical operations, GPS Coordinates, parsed data or concatenated string data. More information regarding **Calculated** fields can be found in 5.1.8 Calculated Options**.**

Image (Professional version only)
When a field is set as **Image**, the user can capture images on devices with integrated cameras. When selecting this field type, your data entry form displays a button allowing the user to launch the camera dialog. This dialog allows you to preview a previously taken picture or capture a new one.

Radio Button
A **Radio Button** field allows the presentation of multiple choices where only one choice is selectable. When a field is set to **Radio Button**, a **Radio Button Options** tab appears allowing additional configuration. More information on how to configure a **Radio Button** can be found in 5.1.9 Radio Button Options.

Data Type
The **Data Type** represents the format of the expected data for the selected field.

General
General is set to accept all data types in a field.

Numeric
Numeric is set when the field is being used for numeric data only. When set to **Numeric**, this allows for the use of a popup calculator if the **Use Popup** option is selected. This also validates the field for numeric data.

Date/Time
Date/Time is used to enter formatted date and time values. These formats are configurable using the date time format configuration screen. Click the **Format** button to bring up the **Date/Time Formatting** dialog.

Current Date/Time Format
From this field the user can enter the format desired by entering valid Date/Time format characters. These characters are described in detail in Appendix A. The format can be cleared via the **Clear** button.

Select date format
This list contains some commonly used date formats. Select one from this list and it will be added to the **Current Date/Time Format** string.

Select time format
This list contains some commonly used time formats. Select one from this list and it will be added to the **Current Date/Time Format** string.

Use GMT Date/Time
Select this option to use a GMT based time stamp independent of the user's local time zone.

Default value
Default value represents the value that is initially displayed in a field when first loading the form.

Visible
This option determines whether this field is visible on the form. Even if a field is not visible, data will still be stored in this field, e.g. a Date/Time stamp hidden from the user.

Show in grid
When **Show in grid** is selected, the field is visible in the **View Data** table. By default, the **Show in grid** option is applied to the first four fields.

Read only
When **Read only** is enabled, the user does not have the ability to enter or modify data in the selected field.

Auto refresh (Android, iOS and PC Only)
When **Auto refresh** is selected, field data is refreshed periodically. When enabled, you can specify a **Cycle** in milliseconds which determines the amount of time that passes between refreshes. Enabling this setting is useful for refreshing Date/Time fields or GPS Coordinates.

Use popup
Use popup allows a popup window to appear when a **Numeric** or **Date/Time** field is selected by the user.

Numeric popup dialog (Professional Version Only)
The **Numeric popup dialog** works like a calculator. When a numeric field is selected, the current numeric value in that field is placed in the calculator. The user can then do simple math calculations on that value or input a numeric value to the field.

Numeric popup dialog button definitions		
+10	:	Adds 10 to the current value
- 10	:	Subtracts 10 from the current value
+1	:	Adds 1 to the current value
- 1	:	Subtracts 1 from the current value
+\-	:	Switches the value between positive and negative
C	:	Clears the value

Date/Time popup dialog (Professional Version Only)
The **Date/Time popup dialog** is used to select dates and times from a calendar and/or time picker. No date/time will be entered to the field unless selected.

Comment
The **Comment** field is used to store design notes or comments for future reference. These notes are not deployed to the form.

5.1.3   After Scan Settings

After Scan settings enable users to automate repetitive steps when collecting data. These settings are activated after any of the following actions: completed bar code or RFID scan, selecting a drop down item, pressing a Down Arrow, Enter or a Tab Key.

Auto submit
When enabled, a record is automatically submitted after an **After Scan** event for this field.

Clear on submit
When enabled, the field is cleared or returned to its default state after a record is submitted. Disabling **Clear on submit** is useful if the same field value is required for multiple record entries.

Refresh field before submit
When enabled, field data is refreshed when the record is submitted. This setting is relevant for **Date/Time**, **Calculated**, **Lookup** and **Variable** Field types.

Auto find on scan
Check this option to automatically perform a search of existing records for the data entered into the field. The existing record will be opened in edit mode if the data is found.

Not found action
This property allows you to select an action to take when an auto find action cannot locate the requested record based on the data entered.

PromptUser
A prompt is displayed indicating the record is not found allowing the user to choose an action to take.

NoPrompt_Add
This setting automatically adds a new record when the record is not found. No prompt is displayed.

NoPrompt_Discard
No new record is added when the record is not found and no prompt is displayed.

Play sound on data change
When enabled, a chime will be played when the selected field value changes.

Disable Data Changed trigger on blank (NULL) data
If this option is enabled, the data changed trigger for this field will not fire when the data for the selected field is empty/blank. This trigger is used to refresh any lookups or calculated fields that depend on the data in this field.

Goto Control ID on data change
Specifies a control on the form by **Control ID**, which receives focus after the current field value changes. If the control specified is a button it will perform the button action.

Goto field
This option allows the user to control the *'tab order'* for the selected field. When a successful **After Scan** event occurs on this field, focus is set to the specified **Goto field**.

Disable go to field
When enabled, overrides the Go to field set enabling you to utilize settings such as Conditional Logic to control the flow of your form.

5.1.4   Validation Settings

Validation Settings allow the user to enforce data integrity checks before submitting a record.

Validate immediately
This option represents whether a field should be validated immediately after the selected field loses focus. Please note, when **Validate immediately** is not selected, the field data is still validated when the record is **submitted**.

Ignore on Blank (Null) Data
This option allows you to disregard validation checks if the selected field is blank.

Case Insensitive
When enabled, ignores the text case for **Data Comparison**, **Unique in table** and **Unique in record** validations.

Unique in table
When selected, this option prevents duplicate data values within the current session.

Unique in record
When selected, this option prevents duplicate data values within the current record.

Data comparison
When enabled, the selected field data is compared to the chosen comparison field based on the selected operator.

Barcode type
When enabled, the barcode scanned in the field must match the selected barcode type. Please note, that this feature is only supported for devices with embedded barcode scanners natively supported by TracerPlus.

Min/Max
Min/Max can be set in one of two modes, **Length** or **Value**. When set to **Length,** the string *length* of the field is validated; when set to **Value,** the *numeric* value of the field is validated. Specify an entry of zero to disable this rule.

Validation Error Options

No Error Sound
With this option enabled, a validation error will not trigger a sound notification.

No Error Message
When this option is enabled, the user is not presented with any message when a validation fails.

Submit on Error
With this option enabled, data is always submitted even if a validation error occurs.

Save To Field
You can choose to save a validation error message to a field in your session. This is commonly used to record the validation error message without interrupting the user's workflow.

Custom Validation Error message
This option overrides the default error message provided via the **Custom Validation Error Message** textbox.

Note: This is helpful in a mixed language environment allowing you to set error messages in any number of languages.

Custom Validation Error Sound
This option is used to allow a custom sound to play when this validation error occurs. This is useful to bring attention to a specific validation error. This only supports .wav file types.

Goto Field on Error
When enabled, select a field to set focus to when the data validation error occurs.

5.1.5 Lookup Options Settings

A Lookup field is populated with data from another session (source). The returned data is based on the lookup definition as described below. To configure a Lookup field, select the **Lookup Options** tab for the selected field.

Enable Lookups
Check this option to enable the lookup for this field.

Source session
Select the session to use as the source of your lookup data.

Relationships
The relationship defines the link between the source session data and the current form data. Use the **Add/Delete** buttons to add or delete relationships as needed.

AND/OR selection
This option defines how lookups behave with multiple relationships. With an **AND** lookup, all relationships must match for the lookup to be successful. With an **OR** lookup, at least one relationship must match for the lookup to be successful.

Local Field
The local field describes the field in *this* session used in the lookup relationship.

Remote Field
The remote field is the field from the source session which is matched against the local field when performing the lookup.

Trigger field
The Trigger field causes the lookup to be performed. The lookup takes place when an After Scan event occurs on the Trigger field.

Lookup result display value
The Lookup result display value defines the data that is returned from the lookup.

Source field
Select the **Source field** from which to return the data when a lookup is successful.

Return a static value
As an alternative to returning the data in a selected **Source field**, you can choose to return the specified static value when a successful lookup is performed.

Update source
This option allows the user to update the data found in a source session. If a successful lookup is performed, any changes made to that field value are then updated to the **Source field** in the **Source session** data when the local record is submitted.

Append if not found
Use Append if not found to add a new record to the source session if the lookup is unsuccessful. The newly added record includes the data for the relationships along with the local field value.

Return Value If Not Found
Configure this option to return a static value on a failed lookup.

5.1.6   Drop Down Options

This tab is used to configure the various **Drop Down** options.

Drop Down Items
Items in the selected field's **Drop Down** list are entered in this area. You can use the add or delete buttons, to add or remove items in this list. **Display value** is the data presented in the list on the mobile device. Additionally, a **Filter Value** can be used to limit the presentation of those display items that match a specific filter as discussed below and the **DB value** is used to submit the specified value instead of the display value.

5.1.6.1 Dropdown Items Import

You can import your dropdown items from the following data sources: ODBC, Excel, or text file. When you click the **Import** button, you are presented with a dialog box that allows you to proceed with the import process.

Data Provider
Select the data source from which to import the dropdown items. You can choose between ODBC, Excel, or text file. The following options are dependent on the data provider selected.

ODBC

Datasource
Select the data source name (DSN) which contains the table from which you will import your dropdown items.

Schema (optional)
The schema for the DSN you are using to import the data.

Username
If the DSN requires a login, you must enter the username here.

Password
If the DSN requires a login, you must enter the password here. Once you've entered both the username and password, press **Login** to continue.

Table
Select the table which contains the data from which you want to import your dropdown items.

Excel

Workbook
Select the Excel workbook which contains the worksheet from which you will import your dropdown data.

Worksheet
Select the Excel worksheet which contains the data from which you will import your dropdown items.

Text File

Select folder
Select the location of the text file from which you would like to import your dropdown items.

Filename
Select the filename of the text file which contains the data to import from.

Display value
Select the column from your specified data source from which you will import items. That column's data is imported into the **Display value** column of the dropdown field's list items.

Also import filter values
Choose whether to also import filter values, and if so, which column to import those values from. The data from that column is imported into the **Filter value** column of the dropdown field's list items.

Also import DB values
Choose whether to also import DB values, and if so, which column to import those values from. The data from that column is imported into the **DB value** column of the dropdown field's list items.

Filter on value from
This option selects the field used to set the filter value. The Drop Down list items are filtered based on this value.

Restrict to list items only
With this selected, users cannot enter "free form" drop down entries; they are limited to items in the list.

Sort items
Setting this option presorts the items in a list. This is performed as an alphanumeric descending sort.

Use DB Value
Setting this option allows the application to store a different value to the database versus what the user selects from the displayed drop down value. The values to store are entered to the **DB value** field.

Note: Additionally, the device can import dropdown items via text file discussed in Appendix D or via a **TracerPlus Connect** synchronization.

5.1.7   Variable Options

This tab is used to configure the options for a **Variable** field type. TracerPlus supports the **Variable** options outlined below.

User

When selected, this field is auto populated with the login ID of the current user. If user logins are not being used, this option defaults to the device ID.

Device

When selected, this field is auto populated with the device ID. The device ID is an identifier that is unique to the device.

Increment

When **Increment** is selected, the **Starting value** and **Increment by** settings are displayed. This feature is meant to be used with the Auto Find on Scan field setting, enabling users to lookup a record value and automatically increment a field using this variable option.

Starting value

The **Starting value** represents the initial value to be auto populated in the selected field.

Increment by

The **Increment by** value is used to determine how much to increase the **Starting value** after each variable update.

AutoNumber

The **AutoNumber** variable is used as an auto incrementing value that increments whenever a record is added to the database. When this variable type is selected, the **Starting value** and **Increment by** settings are displayed.

Starting value

The **Starting value** represents the initial value to be auto populated in the selected field.

Increment by

The **Increment by** value is used to determine how much to increase the **Starting value** after every record submit.

Reset auto number on deploy

When enabled, resets the **AutoNumber** stored on the device and starts over at the set **Starting Value.**

Input Type

The **Input Type** variable stores how data was entered in the selected **Source Field**.
If a user:

- Scans a barcode: the barcode type is stored, e.g. code 39, UPC, etc. (supported hardware only).
- Reads RFID tag: the value "RFID" is stored (supported hardware only).
- Types a value: the value "Keyboard" is stored.

Counter

The **Counter** variable behaves similarly to increment except that it restarts/resets whenever the user leaves the entry screen or a Reset Counter button is clicked.

SQL - *For Advanced Users*
The **SQL** variable allows custom SQL queries to be run against the TracerPlus Database. These queries can include field values entered to a TracerPlus form. For example, `SELECT COUNT(*) FROM Session2 WHERE Field1='[*0*]' AND Field2='[*1*]'`, where the `[*x*]` tokens define a field on your form by index as field values supplied in the `WHERE` clause.

Trigger field
The field which triggers the SQL query to be executed. This also occurs when first opening the form, and after a record submit.

Custom SQL
Use the **Custom SQL** text box to enter the custom SQL to be queried against the TracerPlus database.

AccountID
When selected, this field is auto populated with the Acct ID of your Subscription Account.

UserID
When selected, this field is auto populated with the UUID value of your Subscription Account.

5.1.8   Calculated Options

This tab is used to configure the options for a **Calculated** field type.

Function
Select the operation you wish to perform. TracerPlus supports the functions outlined below.

Add
This function is used to Add two or more values when Data type is set to Number. If the field's Data type is set to General, a string concatenation is performed.

Subtract
This function is used to subtract two or more numeric values.

Multiply
This function is used to multiply two or more numeric values.

Divide
This function is used to divide two or more numeric values.

Modulus
Modulus will return the remainder of a division operation.

Average
Average will sum all the numeric operands, and then return the quotient of the sum divided by the number of operands. Non-numeric operands are treated as a numeric value of zero.

MIN

The **MIN** function is used to select the smallest value between two or more numeric values when Data type is set to Number. When the Data type is set to General, the field with the shortest string length is returned.

MAX

The **MAX** function is used to select the largest value between two or more numeric values when Data type is set to Number. When the Data type is set to General, the field with the longest string length is returned.

LEFT

The **LEFT** function is used to extract source field data beginning at the left side of the string to the defined stop point.

MID

The **MID** function is used to extract source field data from the defined start point to the defined stop point.

RIGHT

The **RIGHT** function is used to extract source field data beginning from the right side of the string to the defined stop point.

GPS_LATITUDE

The **GPS_LATITUDE** function populates the selected field with current latitude of the device (supported hardware only).

GPS_LONGITUDE

The **GPS_LONGITUDE** function populates the selected field with the current longitude of the device (supported hardware only).

GPS_Altitude

The **GPS_Altitude** function populates the selected field with the current altitude of the device (supported hardware only).

HexStringToASCII

Converts the contents of the selected **Source Field** from Hexadecimal to ASCII (text) characters.

ASCIIStringToHex

Converts the contents of the selected **Source Field** from ASCII (text) to Hexadecimal characters.

Setting Parameters for Add, Subtract, Multiply, Divide, Modulus, Average, MIN, MAX

From the Parameter drop down menu, choose two or more operands that you would like to include in the function by highlighting the field and selecting **Insert**. Constant values can also be inserted by typing over the first drop down selection **<Select field or type a CONSTANT>**. **When a constant is entered, the calculation uses that constant value (alpha or numeric) instead of any field value that would otherwise be taken from the chosen field.**

Result=
The **Result=** dialog displays the function with the operands selected. To view larger calculations, simply hover over the **Result=** dialog box. This formula is also displayed as a tree view allowing you to see any nested calculations for the fields involved. The Formula Tree can be used to remove operands by right clicking and selecting **Remove**.

Format Options
The format options allow you to format the result of a calculation.

Decimal places
Specifies the number of decimal places displayed for numeric data types. This can range from zero to six.

Currency
Adds a regional currency symbol to the beginning of the string.

DateTime resolution
When performing a calculation with a DateTime field and a Numeric field the **DateTime resolution** specifies the number of Days, Hours, Minutes, or Seconds are added or subtracted from the DateTime field.

Format
Specifies the resulting format of a DateTime elapsed operation. This is available when subtracting one DateTime field from another. The formatters available include the format strings for Days, Hours, Minutes, and Seconds. For a full list of these formatters see Appendix A.

Ignore blank/NULL values (Average only)
Ignore blank or null values for average calculations. This also removes the blank or null value as an operand in the average calculation. Enabled for average calculations only.

Setting Parameters for LEFT, MID, and RIGHT
When the **LEFT, MID** or **RIGHT** functions are selected, a different configuration screen is displayed to enable the configuration of data parsing.

Source Field
The **Source Field** contains the data to be parsed.

Count occurrences from the right
When enabled, counts the occurrences of a **CHAR** type starting from the right-hand side of the data string.

Start
The **Start** point defines where the parsing begins. A Start point is only available when the MID function is selected.

Stop

The **Stop** point defines where the parsing ends.

Type

There are two available types, INDEX, and CHAR. INDEX is used to define a start/stop point based on string length. CHAR is used to match a specific character or ASCII value.

Value

When INDEX is used, the Start point Value specifies the location in the string where the parsing should start and the Stop point Value specifies how many characters to include.

When **CHAR** is used, the **Start** point **Value** indicates what letter, number or delimiter starts the parsing. The **CHAR Stop** point **Value** indicates what letter, number or delimiter value at which the parsing stops. **Common delimiters like a tab or enter key cannot be visually represented in** ASCII **so TracerPlus shows them as HEX values (e.g. 0x09, 0x0D).**

Dynamic Parsing

Additionally, data can be parsed based on variable field data by choosing a field from the **Value** drop down list. As a result, the spot at which a parse is performed can vary from record to record based on the value contained in this selected field. Dynamic parsing is possible for both **INDEX** and **CHAR** types.

Occurrence

The **Occurrence** field is only available when choosing a **CHAR** delimiter. This option is useful if the string to be parsed contains multiple instances of the same delimiter. The **Occurrence** value indicates how many times to pass the **CHAR** delimiter before starting/stopping the parse.

5.1.9   Radio Button Options

This tab is used to configure the **Radio Button** specific options.

Radio Button Items

Enter the values for the various **Radio Button** items for this field. Only one of these items will be selectable on the form. In the case that no item is selected, this field for that record will be blank. Radio buttons can be further customized using the **Form Designer**.

5.1.9.1   Radio Button Items Import

You can import your radio button items from the following data sources: ODBC, Excel, or text file. Once you click the **Import** button, you will be presented with a dialog box that allows you to proceed with the import process.

Data Provider

Select which data source to import the radio button items from. You can choose between ODBC, Excel, and text file. The following options are dependent on the data provider selected.

ODBC

Datasource
Select the data source name (DSN) which contains the table from which you will import your radio button items.

Schema (optional)
The schema for the DSN you are using to import the data.

Username
If the DSN requires a user to login, you must enter the username here.

Password
If the DSN requires a user to login, you must enter the password here. Once you've entered both the username and password, hit **Login** to continue.

Table
Select the table which contains the data from which you want to import your radio button items.

Excel

Workbook
Select the Excel workbook which contains the worksheet from which you will import your radio button data.

Worksheet
Select the Excel worksheet which contains the data from which you will import your radio button items.

Text File

Select folder
Select the location of the text file from which you would like to import your radio button items.

Filename
Select the filename of the text file which contains the data to import from.

Advanced
Opens the Advanced text options menu

Delimited
Allows a character to be selected that acts as boundary between other characters, strings or words in the selected text document

Text Qualifier
Allows a Text Qualifier to be chosen for the selected text document

Fixed Width

Characters, words, and strings in the text document are defined by a set width when this option is on

Display value

Select the column from your specified data source from which you will import items. That column's data will be imported into the **Display value** column of the radio button field's list items.

5.2 Form Designer

The **Form Designer** allows the user to completely customize the data collection screen. Using the **Form Designer**, the user can drag and drop **Controls** to the form such as textbox entry fields, labels, tabs, buttons, data grids, and images (e.g. company logos).

When creating a new form and first selecting the **Form Designer** tab, you will be presented with an option to build your form automatically. Choosing the **Create Default** button places all the tabs, fields, labels and buttons that have been configured in the **Field Settings** tab into your form using the default layout. From there, each element can be moved and edited as desired. Alternatively, you can select the **Blank Canvas** option to create the look of your form from the ground up.
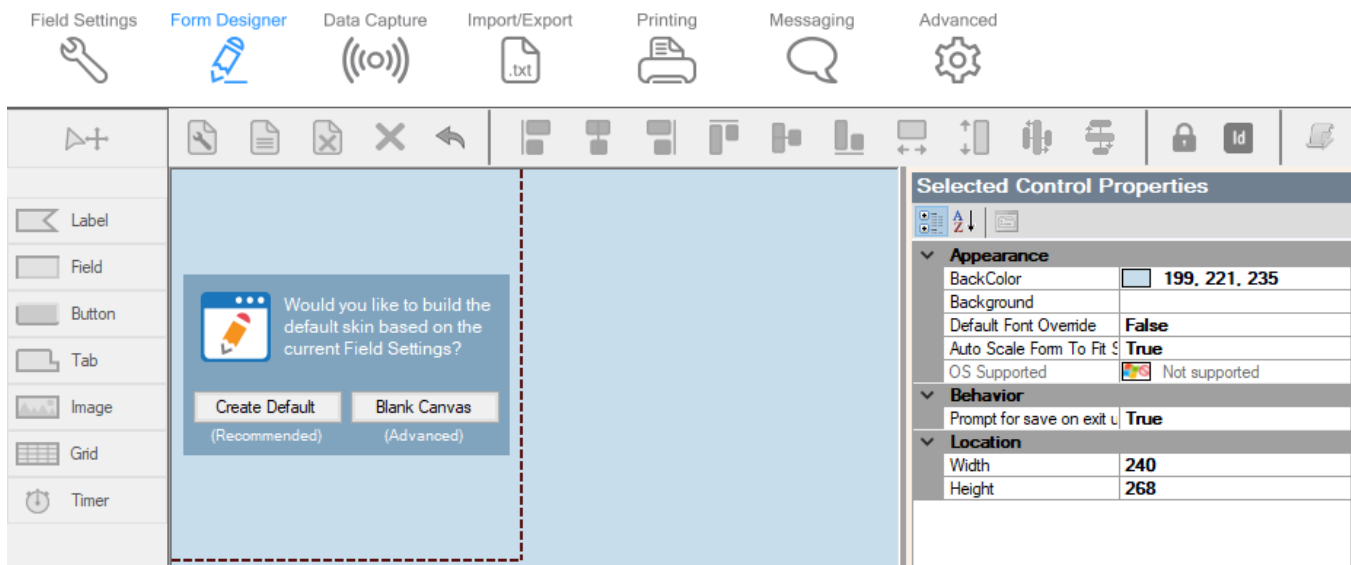
5.2.1 Form Designer Toolbar

The **Form Designer Toolbar** allows the user to add, remove, and modify elements of the design form.

Form Properties

Click the **Form Properties** icon to open the **Form Properties** dialog. From this dialog, the user can adjust different attributes of the form.

Name (optional)

Enter a name for the form.

Dimensions
Use this drop down to set the dimensions of the form. The drop down contains some commonly used dimensions for different device screen sizes. To set a custom size, select **Custom** from the drop down and enter the dimensions into the Width and Height fields.

Automatically scale form to match
When checked, this allows any existing form controls to scale to the newly selected screen size.

Set to Defaults
Press the **Set to Defaults** button to return to the default form, using the defined **Field Settings**.

Clear Form
Press the **Clear Form** button to completely clear the contents of the form.

Delete Selection
Click this button to remove the selected control(s).

Align Controls
Select one of these six buttons to align any selected controls along the edge chosen. The six options are: **Align Left**, **Align Horizontal, Align Right**, **Align Top, Align Vertical, and Align Bottom**. To align multiple objects, hold the shift button while selecting the controls you wish to align. All alignments are based on the position of the first control you select. In the case of the horizontal/vertical align buttons; the respective midpoints of the selected controls will be aligned to match that of the first selected control. If only one control is selected, that control will be centered with respect to the form.

Match Width/Height
The **Match Width** and **Match Height** buttons allow you to force the height/width of any selected controls to match. To match multiple controls, hold the shift button while selecting the controls to match. All width/heights are based on the position of the first control you select. Please note, text box and drop down list controls do not allow the adjustment of their heights. To adjust the height of these type controls, adjust the font properties instead.

Equally Space Horizontally/Vertically
With three or more controls selected, the respective spacing between the selected controls is made equal. This spacing is calculated from the total amount of space available between the left-most/top-most and right-most/bottom-most controls, divided by the number of controls selected.

Undo
The **Undo** button undoes the previous action.

Lock

The **Lock** button locks all controls on the form, preventing them from being moved. If clicked again the **Lock** button will unlock all controls on the form.

ID

The **ID** button toggles the visibility of a control's **Control ID** directly on the form.

Form Logic

Opens the Form Logic Window, described in Chapter 7: Form Logic.

5.2.2   Create Control Toolbar

Using the **Create Control Toolbar** on the left side of the form designer, users are able to add new **Controls** to the form. Clicking one of these menu items places the corresponding control on the form. To configure the properties of each control, use the **Control Properties** grid described in the Control Properties section of this chapter. To remove focus from a selected control, click the **Cursor** button in the upper left corner.

Label
Click the **Label** button, then click the location on the form where the label is to be added.

Field
Click the **Field** button, then click the location on the form where the **Field** is to be added.

Button
Click the **Button** button, then click the location on the form where the **Button** is to be added**.**

Tab
Click the **Tab** button, then click the location on the form where the **Tab** is to be added**.** Right click on the newly added **Tab** control to add or remove **Tab** pages. Please note that **Tab** controls can only be added directly to the form and not within another **Tab** control.

Image
Click the **Image** button, then click the location on the form where the **Image** is to be added**.**

Grid
Click the **Grid** button, then click the location on the form where the **Grid** is to be added**.**

Timer
Click the **Timer** button, then click the location on the form where the **Timer** is to be added. The **Timer** is a special control that is only visible on the **Form Designer**.

Note: You can place multiple controls on the form simultaneously via the mouse scroll wheel or by holding the **ALT** key while clicking on the form. When using the mouse scroll wheel, a number appears inside the crosshair symbol cursor. This number represents the number of controls to be placed after clicking the mouse button.

5.2.3   Control Properties

Whenever a control is selected on the form, the **Control Properties Grid** is populated with a variety of configurable options. The available options vary depending on the type of control selected. The different types of control properties are described below.

5.2.3.1 Common Properties

Many of the properties presented in this grid are common to all controls. These are discussed below.

Control ID
The **Control ID** is a unique identifier for all controls on the form.

BackColor
This determines the background color of the selected control. To choose a color, click the **BackColor** dropdown to open the color selection dialog.

ForeColor
This determines the foreground color of the selected control. Currently, this setting is reserved for font color. To choose a color, click the **ForeColor** dropdown to open the color selection dialog.

Font
Use this option to select custom fonts from those installed on the host PC. Click the font name then the ⬚ button to open the font selection window. From there you can select font, font style and size.

Note: While you can choose any font that is properly installed on your PC, in many cases you will need to manually copy that font to the mobile device in order for it to render correctly. With the variety of both mobile and desktop operating systems and the resulting differences in how each handles fonts, the method of copying that font may vary. Check your device/PC guide for additional information. The user is also responsible for confirming that each font can legally be copied to the mobile device.

Caption
Change the **Caption** value to set the text which appears on the control.

Visible
Change this setting to turn the visibility of the selected control on or off. Please note that this setting only changes the visibility for the selected control on the mobile device. The control is always visible in the **Form Designer**.

Location (Top, Left, Width, Height, Locked)
The **Location** settings provide a precise way to place the control on the form. Settings are provided for **Top** and **Left** starting points as well as **Width** and **Height**. The additional **Locked** property prevents accidental mouse movement of the selected control during form design.

5.2.3.2 Label Properties

Justification
Setting the justification allows the text of a label to be aligned as selected.

- **Left –** Align the caption/data of the label to the left-hand side of the control.
- **Right –** Align the caption/data of the label to the right-hand side of the control.
- **Center –** Align the caption/data of the label to be centered relative to the position of the control.

Data Driven
Setting the data driven option to **True** allows the caption of the label to be set based on the current value of a data record. When this option is true, the user must select a data field from which to get the presented data.

Source Field
The **Source Field** is used to assign which field the data is taken from when displaying current record data.

5.2.3.3 Field Properties

Hide Refresh Button
In many cases, entry fields include a refresh button to update data. To hide this button, set this option to **True**.

Multiline
Setting the **Multiline** property to **True** allows the user to create a field that shows multiple lines of data, including a scroll bar if needed. This property is particularly useful with comment or memo type field data.

TextCase
Setting this property to **Upper** or **Lower** case forces the data entered into the field control to that case respectively.

Mask Input
This setting will mask each character with an asterisk (*) as it is typed into a field. This is useful for password type fields or sensitive information.

Hide Keyboard
This setting is used to control the visibility of the on-screen keyboard when this control is selected (Android, iOS and PC only).

- **Never** – The on-screen keyboard will be visible when this control is selected.
- **OnFocus** – The on-screen keyboard will be hidden only when this control is first selected. Clicking the control while it is already selected will show the on-screen keyboard.
- **Always** – The on-screen keyboard will be hidden when this control is selected.

Source Field
The **Source Field** is used to assign a field in your **Session** to this control. This control is visually presented to match the respective **Field Type** of the selected field.

Input type
This setting is used to control the allowed type of input for this control. Available options are described below.

- **Any** – Allows all forms of data input.
- **Keyboard** – Limits data to keyboard entry only.
- **Barcode** – Enables the barcode scanner for this field (supported hardware only). In Android, uses the devices built in camera for barcode scanning. RFID and keyboard entry are not disabled.
- **RFID** – Enables the RFID scanner for this field (supported hardware only). Barcode and keyboard entry are disabled.

Radio Button Item
Choose which of the radio button items this field control should represent.

5.2.3.4 Button Properties

Button Actions
Every button placed on the form is intended to perform a certain action. Different properties are enabled depending on the selected button action.

None
This setting results in no action taken when the button is pressed. This is useful for OnClick Form Logic events.

Done
Closes the entry form and returns the user back to the previous screen.

Confirmation Prompt
If true, the user is prompted to save data before leaving the form. If false, the form is closed immediately with no prompt.

Submit
Saves the current contents of the form to the database.

Clear All
Clears all of the contents of the **Entry Form**.

Use Default Field Values
This option allows you to set all fields to their configured default value instead of completely clearing the data in the fields.

Include Read Only Fields
This option defines whether Read-Only fields are also cleared by the **Clear All** action.

Confirmation Prompt
If true, the user is prompted for confirmation before performing the **Clear All** action.

Refresh
Refreshes the information contained in the specified **SourceField** or **Refresh Control ID**. Data may need to be refreshed for a number of reasons including calculations, lookup fields, data grids or even Date/Time fields.

Source Field
Indicates which field should be refreshed.

Refresh Control ID
Indicates the Control ID on the form that should be refreshed. This overrides the **SourceField** setting.

Launcher
The **Launcher** action closes the data collection form and returns the user to the **Launcher** screen.

Confirmation Prompt
If true, the user is prompted to save data before leaving the form. If false, the form is closed immediately with no prompt.

Print
Opens the print dialog.

ReportToUse
The print report to default to when the print prompt is displayed. The list is made up of the available print reports configured for the current session.

TPCLive Status
Opens the **TracerPlus Connect** live status dialog, used to indicate the status of the connection to the **TracerPlus Connect** server.

ReadSerial (Android only)
Attempts to read the serial port for externally provided data.

SourceField
Used to indicate which field should receive the serial data being read.

Initial Command
Used to indicate the Control ID on the form containing any command data to send to the connected serial device.

Message Terminator (Android only)
Specifies the character that indicates the message received from the stream is complete. The value is specified as a hex value.

Message Length (Android only)
Specifies the number of bytes that should be read from the stream to be complete.

Timeout (Android only)
Specifies in milliseconds how long TracerPlus should wait for the read to complete before aborting the read attempt.

Retries (Android only)
Specifies how many times TracerPlus should retry a read when a timeout has been reached from a previous attempt.

Bluetooth Device Control (Android only)
Specifies the control which will contain the Bluetooth MAC address to read from when the button is clicked.

LaunchCam
Launches the camera viewfinder to capture an image (supported hardware only).

Default Camera (Android Only)
Determines the default camera to use when starting the camera. If Front is selected and there is none available, the back camera will be used. This is only available when performing an Auto Capture as described below.

Auto Capture (Android Only)
If true, the image will be captured with no user intervention. If false, the user will be prompted to take a picture.
Source Field
Indicates which field stores the captured image after taking a picture.

Goto Page
Displays a new tab page when the button is clicked.

Goto Page
This defines which tab is displayed when the button is clicked. It is important to note that the first page on a given tab is considered index **0**. Optionally, this value can be set to **+1** to go to the next page or **-1** to go to the previous page.

Tab Control ID
The targeted **Tab Control**. The tab's **Control ID** is displayed in the **System** section of the **Control Properties** grid.

FieldInput
Inputs keyboard data into a specified form control. An example use of the **FieldInput** is outlined in Appendix C.

Target Control ID
Defines the control by its **Control ID** to receive the keyboard data. The **Control ID** is displayed in the **System** section of the **Control Properties** grid**.**

Overwrite
This setting indicates whether any existing data in the selected control should be overwritten or appended.

Trigger After Scan
This option defines whether this button action fires the After Scan event for the assigned control.

String Value
This property controls the actual keyboard data entered to the target control.

CustomAction
Reserved for internal PTS use.

Data View
Return the user to the **Data View** screen.

Scan
Turn on the embedded barcode scanner (supported hardware only). Please contact PTS Technical Support if you have a question on whether your device is supported.

Target Control ID
Defines the control by its **Control ID** to receive the scan data. The **Control ID** is displayed in the **System** section of the **Control Properties** grid**.**

Logout
Execute a user logout when clicked. This is only relevant if you have implemented User Logins.

Confirmation Prompt
If true, the user is prompted for confirmation before performing the **Logout** action.

Run Application (Android only)
This action offers the ability to open a URL on Android devices.

External Application
Enter the location (file path on the device) of the 3rd party application you wish to launch. For example, "**\Windows\iexplore.exe"** launches the web browser.

CMD Line Control ID
Allows command line parameters to be passed to the **External Application** specified in this **Control ID**. For example, an online map could be loaded by

passing in map coordinates via a URL while using iexplore.exe for the **External Application**. For Android, this would be the URL you are looking to open.

ExportData
This action exports session data for each session as defined in each Session's Import/Export settings.

SendMessage
This action opens the **Messaging** dialog.

ReportToUse
The message report to default to when the message prompt is displayed. The list is made up of the available message reports configured for the current session.

RFIDTagWrite
This action performs an RFID tag write to the specified RFID tag (supported hardware only).

Tag ID Control ID
Specifies the control on the form that contains the tag ID to be written to.

Read/Write Control ID
Specifies the control on the form that contains the data to write.

Read/Write/Lock Fail Goto Control ID
Specifies the control on the form to go to when the tag access operation has failed. This overrides the **Goto Control ID** on failure.

Tag Memory Bank
Specifies the memory bank to write to. The memory banks supported are detailed below.

MEMORY_BANK_EPC
The memory bank of the EPC value used to identify the tag.

MEMORY_BANK_USER
The memory bank used to store additional user defined data.

MEMORY_BANK_RESERVED
The reserved memory bank to write kill or access passwords.

MEMORY_BANK_TID
The tag identifier memory bank. Unsupported for a write operation.

Result Message Control ID
Specifies the control on the form, by Control ID, that will receive a resulting message of the tag access operation.

Word Offset Control ID
Specifies the control on the form, by Control ID, that contains the starting word
for the tag access operation. This is optional.

Word Count Control ID
Unsupported in the Write operation. The Word count is defined by the length of
the data to write.

Access Password Control ID
Specifies the control on the form, by Control ID, that contains the tag access
operation password. This is only required for password protected tags.

RFIDTagRead
This action performs an RFID tag read of the specified RFID tag (supported hardware
only).

Tag ID Control ID
Specifies the control on the form that contains the tag ID to be read from.

Read/Write Control ID
Specifies the control on the form that will accept the data read from the tag.

Read/Write/Lock Fail Goto Control ID
Specifies the control on the form to go to when the tag access operation has
failed. This overrides the **Goto Control ID** on failure.

Tag Memory Bank
This property determines which memory bank the data is read from.

MEMORY_BANK_EPC
The memory bank of the EPC value used to identify the tag.

MEMORY_BANK_USER
The memory bank used to store additional user defined data.

MEMORY_BANK_RESERVED
The reserved memory bank to read kill or access passwords.

MEMORY_BANK_TID
The tag identifier memory bank.

Result Message Control ID
Specifies the control on the form, by Control ID, that will receive a resulting
message of the tag access operation.

Word Offset Control ID
Specifies the control on the form, by Control ID, that contains the starting word
for the tag access operation. This is optional.

Word Count Control ID
Specifies the control on the form, by Control ID, that contains the number of words to read from the tag. If unspecified (-1) this goes by the byte count set in the **Data Capture** settings.

Access Password Control ID
Specifies the control on the form, by Control ID, that contains the tag access operation password. This is only required for password protected tags.

DoSync
This action initiates data synchronization to a **TracerPlus Connect** server

SyncHostID
The **SyncHostID** is used to identify which host you wish to sync with. This Host ID is available via the Connect options in the Project Properties tab. The tab labeled **Hosts** allows you to define and identify any number of **TracerPlus Connect** hosts.

SyncProfileID
The **SyncProfileID** identifies which profile to sync within your **TracerPlus Connect** project.

Sync Filters
Sync Filters are supplied to the **TracerPlus Connect** server to filter the data requested in a sync. This allows a user to filter data at the time of sync. To configure **Sync Filters**, click the ellipsis button.

- **Profile ID** – Defines the profile that receives the filters.
- **Process ID** – Defines the process within the profile that receives the filters.
- **Filter ID** – Specifies the dynamic filter in **TracerPlus Connect** to use.
- **Field** – This is the field that contains the filter value to use during the sync.

GridPost
This action posts the records in a cached grid to its source session. This action can also be accomplished via the Grid toolbar.

Grid Control ID
This property is used to identify the grid that the **GridPost** action applies to.

GridDeleteAll
When in cached mode, this action clears all the records in the grid. If set in non-cached mode, this button deletes all records in the grid's source session. This action can also be accomplished via the Grid toolbar.

Grid Control ID
This property is used to identify the grid that the **GridDeleteAll** action applies to.

Confirmation Prompt
If true, the user is prompted before deleting all records from the grid control.

GridDelete

When in cached mode, this action clears the selected record from the grid. If set in non-cached mode, this button deletes the selected record in the grid's source session. This action can also be accomplished via the Grid toolbar.

Grid Control ID

This property is used to identify the grid that the **GridDelete** action applies to.

RFIDInventory

This button activates the RFID scanner (equivalent to pressing the scan trigger on the device). Tapping the button again stops the RFID scanner (supported hardware only).

Scanner On Caption

Choose a caption to display on the button when the RFID scanner is on. This value is set to the standard button caption by default.

Scanner On Color

Choose a color for the button when the RFID scanner is on. This value is set to the standard background color of the button by default.

Exit

This button allows the user to quit TracerPlus directly from the entry form.

Confirmation Prompt

This option prompts the user for confirmation before exiting the application.

Prompt Data Changed

Also prompt when data has changed on the form

DBFirst

This action populates the entry form with data from the first record in the currently open session. This record is then in edit mode until the record is submitted or another DB button action is triggered.

Grid Control ID

This property is used to identify the **Grid Control** that the **DBFirst** action applies to. This will navigate the selected grid control's data instead of the session data. This action also applies to the **DBLast**, **DBNext**, **DBPrevious** and **DBNewRecord** button actions.

DBLast

This action populates the entry form with data from the last record in the currently open session. This record is then in edit mode until the record is submitted or another DB button action is triggered.

DBNext

This action populates the entry form with data from the next available record in the currently open session. This record is then in edit mode until the record is submitted or another DB button action is triggered.

DBPrevious
This action populates the entry form with data from the previously available record in the currently open session. This record is then in edit mode until the record is submitted or another DB button action is triggered.

DBNewRecord
This action resets the entry form to its default setting; allowing a new record to be added. This button can also be used to undo the edit state of the other DB Navigation buttons.

DBDeleteAll
This action deletes all records in the currently open session.

> **Delete Data From All Sessions**
> If set to **True**, data from all sessions is deleted. If **False**, only the current session's data is deleted.

> **Confirmation Prompt**
> If true, the user is prompted before deleting all records.

RFIDTagLocator
This action is used to find a specified RFID tag by its tag ID. When the button is clicked, a pop-up window appears with a meter gauge. This meter along with an audio cue is used to determine the proximity to the specified Tag ID (supported hardware only).

> **Tag ID Control ID**
> This property defines which control on the entry form contains the Tag ID you wish to locate.

RFIDFlushTagList
This action is used to manually clear the RFID tag list (supported hardware only). This should be used when **Flush Tags** is set to User under Data Capture settings.

Validate Field
This action validates the data in the defined field against that field's Validation Settings.

> **Source Field**
> Defines the field on which to perform data validation.

> **OnFail Goto Control ID**
> Set focus to this **Control ID** if the data validation fails. If this **Control ID** is a button, the button action is performed.

> **OnSuccess Goto Control ID**
> Set focus to this **Control ID** if the data validation passes. If this **Control ID** is a button, the button action is performed.

ConfirmationPrompt
This button prompts the user for a yes or no confirmation with a configurable message.

MessagePrompt
Defines the confirmation message presented to the user.

OnYes Goto Control ID
Defines the control ID to go to if the user answers **Yes**. If this is a button, the button action will be performed.

OnNo Goto Control ID
Defines the control ID to go to if the user answers **No**. If this is a button, the button action will be performed.

On Cancel Goto Control ID
Defines the control ID to go to if the user clicks **Cancel**. If this is a button, the button action will be performed.

ResetCounter
This button action resets the Counter variable value for the selected **Source Field**. To configure a counter a variable, go to the Counter Variable Type settings.

Source Field
Defines the counter field to reset.

IncrementValue / DecrementValue
Increase or decrease the numeric value of a field by an integer value defined by you. Note that **Increment** and **Decrement** are two independent, separate actions.

Source Field
The field containing the value to increase/decrease. If the data from this field is not numeric the button action is not performed.

Increment/Decrement By
The integer value to increase/decrease the **Source Field's** value by.

TriggerAfterScan
When set to **True**, the **Source Field's** after scan settings are triggered when the Increment/Decrement action has been performed.

GridSort
This button action will sort a grid control.

Grid Control ID
This property is used to identify the grid that the **Sort** action applies to.

Grid Sort Column Index
This property is used to identify the column within the grid to apply the Sort action to.

GPS Average
Improves GPS accuracy by capturing multiple GPS coordinates and calculating the average.

Sample Count
Defines how many GPS coordinate samples should be taken. The higher this value is the more accurate the GPS reading.

Latitude Control ID
Set to the control on your form that should display and capture the GPS Latitude.

Longitude Control ID
Set to the control on your form that should display and capture the GPS Longitude.

Auto Close GPS Dialog
When set to **True**, this automatically closes the GPS dialog box when it has finished taking all GPS samples. This dialog will remain open if set to **False**.

Minimum Precision
Measured in meters, the lower this value is the more accurate the GPS reading.

Timer
Use a button action to start/stop a timer control.

Timer ID
The control ID of the timer control to activate.

Action
Choose whether the button starts or stops the timer.

Toggled Caption
Choose a caption to display on the button when the **Timer** has been started and is running.

Toggled Color
Choose a color for the button when the **Timer** has been started and is running.

ToggleInput
Toggles the **Input Type** for a selected control. Toggling will switch the **Input Type** between Any, Barcode, Keyboard and RFID

Toggle Input Control ID
Control specified by Control ID that will have its **Input Type** toggled.

Toggle Default
The default **Input Type** of the specified control when first opening the form.

Toggle Any
Allow toggling to the **Any Input Type**.

Toggle Barcode
Allow toggling to the **Barcode Input Type**.

Toggle Keyboard
Allow toggling to the **Keyboard Input Type**.

Toggle RFID
Allow toggling to the **RFID Input Type**.

Toggle Caption Any
Specifies the button caption when toggled to the **Any Input Type**.

Toggle Caption Barcode
Specifies the button caption when toggled to the **Barcode Input Type**.

Toggle Caption Keyboard
Specifies the button caption when toggled to the **Keyboard Input Type**.

Toggle Caption RFID
Specifies the button caption when toggled to the **RFID Input Type**.

OBD2 (Android only)
Retrieve diagnostic information from an OBD2 enabled automobile via a Bluetooth capable OBD2 transmitter. Configure this button action further via the available **OBD2 Options** property that is displayed upon selection.

Bluetooth pair name
This is the name assigned to the OBD2 device connected to your car and transmitting the Bluetooth signal. The Bluetooth pairing must be done in the Android settings application.

Type
Specify the type of diagnostic information to retrieve.

Control ID
Specify where the diagnostic information is returned to via control ID.

Download Project (Android, iOS and PC only)
Opens the **Download Project** dialog to select a project to download to the device. If the Host Address Control ID and Project Name Control ID are specified the project will be downloaded without a prompt.

Host Address Control ID
Specifies the control on the form (by **Control ID**) that contains the address and port of the deploy **TracerPlus Desktop deploy server**.

Project Name Control ID
Specified the control on the form (by **Control ID**) that contains the project name to request from the deploy server specified in the **Host Address Control ID** property.

BLEDevice (Android/iOS Only)
Connect and receive information from BLE devices. Configure this button further via the BLE options property that is displayed in this section.

BLE Options
Opens the BLE Device Configuration menu

BLE Device Configuration
Used to configure a BLE device UUID and a Control ID it is paired with or the BLE beacons to scan for.

Service
A list of selectable predefined UUID, this includes BLE Beacons to scan for beacons on Android and iOS devices (iOS devices only support iBeacon scanning).

Characteristics
Use the Characteristic tab to configure the characteristics to listen and connect with when not scanning for BLE Beacons.

Characteristic UUID
The UUID for one set of data received from a BLE Device

Custom Format (JavaScript)
Create custom conversions and formatting for data received from BLE Devices. If this value is left blank the data received will be the raw data received from the device.

Add
Add another line to the characteristics list

Remove
Remove a line from the characteristics list

Filters
The **Filters** tab is visible when **BLE Beacons** is selected as the service to scan. The filters define what beacons should be captured when a scan is in progress. These filters include things like the type of beacon, **iBeacon** or **Eddystone** and properties of those beacons. For example, if a user wanted to inventory an iBeacon UUID, with a Major number, these values can be added to the Filter list, and only iBeacons that match that UUID and Major number will be returned during the scan. When multiple values are specified in a single filter, they must all match the scanned beacon to be returned. Each row in the filter list will be OR'd together resulting in any matching beacon being returned.

Beacon Type
Filter used to set what beacon type should be scanned for during a scan operation. Options include **Any**, **iBeacon**, and **Eddystone**.

UUID (iBeacon filter)
When specified, only iBeacons with a matching UUID will be returned during the scan operation. At least one UUID is required when scanning on an iOS device.

Major (iBeacon filter)
iBeacons can be configured with a value called the Major number. This filter when specified, will read only matching major numbers when scanning for iBeacons.

Minor (iBeacon filter)
iBeacons can be configured with a value called the Minor number. This filter when specified, will read only matching minor numbers when scanning for iBeacons.

Frame Type (Eddystone filter)
Eddystone beacons can come in different formats, these are called Frame Types. Currently there are four different frame types, **UID**, **URL**, **TLM**, **EID** (EID is not supported in TracerPlus). Use this filter to specify which frame type to include during the scan operation.

Namespace (Eddystone filter)
Similar to the Major number when scanning for iBeacons, the Namespace value can be a subset of the UID frame type. When specified, only matching Namespaces will be included during the scan operation.

Instance (Eddystone filter)
Similar to the Minor number when scanning for iBeacons, the Instance value is used to define a specific beacon. When this filter is specified, only a beacon matching the specified Instance value will be returned during a scan operation.

MAC Address (Eddystone only)
When specified only a beacon with a matching MAC Address is returned during a scan operation.

Add
Add another line to the filter list.

Remove
Remove the selected line from the filter list.

RFID SetPower
This option sets the signal strength of the RFID reader; the range for this is 5 – 30 decibels. This is a useful setting when working in different environments. For example, when working in close proximity to a tag, it is sometimes better to use a lower power to achieve better short-range resolution.

RFID Power Level Control ID
Sets the power level of the RFID reader. Generally, the higher the value the longer the reader range. Specified by the Value in the Control ID on the form.

PairBluetoothDevice (Android Only)
Enables the pairing of a Bluetooth device using its Bluetooth MAC Address without having to access the Bluetooth settings of the device.

Bluetooth Device Control ID
Control ID that will contain the **Bluetooth MAC Address** of the device to pair with. This address can be scanned or keyed into a **Field Control**.

Status Control ID
Control ID that will display the connected status of the current Bluetooth device pairing. This will use the **Connected Status Value** or **Disconnected Status Value** described below.

Connected Status Value
Add text here to display a custom value when the paired Bluetooth device is in the Connected state.

Disconnected Status Value
Add text here to display a custom value when the paired Bluetooth device is in the Disconnected state.

Pair Only
When set to **True**, will only pair the Bluetooth device. Setting to **False** will pair and connect the Bluetooth device.

ReconnectPeripherals
When clicked, TracerPlus will Connect or Reconnect any addon peripherals such as Barcode, or RFID Scanners. This can be useful when using a device such as the **Zebra RFD40/90** or similar. If this device loses connection to TracerPlus, or the device was asleep when TracerPlus started, the **ReconnectPeripherals** button will reestablish communication with the device.

DisconnectPeripherals
When clicked, TracerPlus will Disconnect any addon peripherals such as Barcode, or RFID Scanners. This can be useful when using a device such as the **Zebra RFD40/90** or similar and are looking to control when the device Disconnects.

Launch URL
When clicked, opens an in-app browser navigating to the URL specified in the URL control ID field.

URL Control ID
The Control ID on your form that will contain the URL you wish to navigate to.

Hide URL Bar
When set to True, the URL Bar of the in-app browser window will be hidden from view.

Hide URL Navigation Controls
When set to True, the Navigation controls (Back/Forward) of the in-app browser window will be hidden from view.

Hide Zoom Controls
When set to True, the Zoom controls of the in-app browser window will be hidden from view.

Clear Cache
When set to **True**, clears the saved settings of the in-app browser such as saved passwords and cookies.

Clear Session Cache
When set to **True**, clears the saved settings of the in-app browser such as saved passwords and session cookies.

RFIDTagLock
This action performs an RFID tag lock/unlock of the specified RFID tag (supported hardware only).

Tag ID Control ID
Specifies the control on the form that contains the tag ID of the tag to be locked.

Tag Lock Action
Specifies the lock action. This can be one of the following values: Lock, Unlock, PermaLock, PermaUnlock.

Read/Write/Lock Fail Goto Control ID
Specifies the control on the form to go to when the tag access operation has failed. This overrides the **Goto Control ID** on failure.

Tag Lock Bank
This property determines which bank of memory to perform the lock/unlock on.

EPC
The memory bank of the EPC value used to identify the tag.

USER
The memory bank used to store additional user defined data.

TID
The tag identifier memory bank.

ACESSPASSWORD
The last 2 words of the Reserved Memory Bank.

KILLPASSWORD
The first 2 words of the Reserved Memory Bank

Result Message Control ID
Specifies the control on the form, by Control ID, that will receive a resulting
message of the tag access operation.

Access Password Control ID
Specifies the control on the form, by Control ID, that contains the tag access
operation password. This is only required for password protected tags.

Hot Key
This property allows the user to set a physical hot key to a specific button on the form.

Goto Control ID
This property allows the user to set focus to a specific control after a button action has taken place.
If this **Control ID** is also a button, the Button Action will be performed. This is a very useful property
for allowing multiple actions to occur with a single button press.

5.2.3.5 Image Properties

ImageStyle
The **ImageStyle** property defines the type of image added to the form.

Image
Selecting this option allows the user to add a custom image. This option also enables the ability
to define clickable Button Actions to the image control.

StatusIcon
This option allows the user to display this image as a Status icon. Currently, there is one
available status icon type.

> **Filtered**: Displayed when the current session's data is filtered.

ButtonAction
An image can be configured to act like a button. This feature supports all of the actions described in
the Button Properties section of this document.

Source Field
This property serves two purposes depending on its configuration.

- If this Image Control has a button action defined, this Source Field property
  defines which Field to use as appropriate for the defined button action.

- If this Image Control is not defined with a **Button Action**, the **Source Field**
  property references the source field data for the filename of the image to load.
  This presents an easy way to dynamically change the image of this image control
  based on variable data directly on the form.

Image
Use the **Image** property to select the image to be displayed in this control. Click the ⬚ button to browse your PC for the image.

ClickedImage
If the image is used as a button, the **ClickedImage** property is used to show a custom image when the image has been clicked. This is useful to add a visual indicator to show that the button has been pressed. Click the ⬚ button to browse your PC for the image.

5.2.3.6 Tab Properties

TabsAlign
The **TabsAlign** property determines the orientation of the selected tab control. The 4 options are **Right**, **Left, Top** and **Bottom**. Selecting one of these options moves the tabs to this defined edge of the tab control.

Caption
Use the **Caption** attribute to change the text on the selected tab.

Goto Control ID
This option allows the user to specify a control on the tab that receives focus when the tab is selected.

Hide tab border
Use the **Hide tab border** option to turn off the tab control border and its tabs. When set to **True**, form buttons with a **ButtonAction** of **GotoPage** are required to navigate the tab control.

5.2.3.7 Grid Properties

Show Column Headers
This setting provides the option to enable or disable the column headers for the **Grid Control**.

Data Options
By clicking the field to the right of the **Data Options** label, you are presented with a ⬚ button which opens the **Grid Control Options** dialog.

Grid Control Options
This dialog is used to configure the data related options of a **Grid Control**.

Source Session
A dropdown that lists the sessions available to use as a **Source Session**. This can be assigned to any session in the current project.

Column Tab
This group of settings determines which fields from the source session will be visible in the **Grid Control**. Click the **Add** button to add a column to the grid.

Appearance
These properties determine how these columns will appear within the **Grid Control**.

Caption
Use this option to customize the column header text.

Column Width
This setting determines the width of the selected column within the context of the **Grid Control**.

Control Binding
These properties set how the column will be bound in the grid.

Binding Direction
Specifies whether data entered into a control, or selected in a grid is copied to the corresponding side of a binding.

- **Both** – Data entered into a control is copied to the grid column. Data selected in the grid is copied to the control.
- **FromControl** – Data entered into a control is copied to the grid column. Data selected in the grid is not copied to the control.
- **ToControl** – Data selected in the grid is copied to the control. Data entered into a control is not copied to the grid column.

Bound Control
The **Bound Control** defines a control on the form which is "linked" to the selected column. This control is specified by the Control ID. When bound, a control on the form is populated with the column data for the selected row in the **Grid Control**. This can also be used to enter new rows of data to the grid control from the bound control. This is described in the **Cached Mode** settings of the **Grid Control**.

Key Column
This setting determines whether or not the column is unique when adding a new row in **Cached Mode**.

Clear Control on Insert/Update (Cached Mode Only)
When set to **True**, this column's bound control is cleared if a new row is inserted to the grid.

Required in Binding (Cached Mode Only)
When set to **True**, this column is required before a bind inserts a new row to the grid.

Triggers Binding (Cached Mode Only)
When set to **True**, this column's bound control inserts a row to the grid.

Data

These properties determine the behavior of the columns within the **Grid Control**.

Sort

This setting is used to sort the column by either ascending or descending order. Only one column can be sorted at a time.

Allow Ascending Sort

If **Allow Ascending Sort** is set to **False**, an ascending sort is not allowed when sorting the grid control on the selected column.

Allow Descending Sort

If **Allow Descending Sort** is set to **False**, a descending sort is not allowed when sorting the grid control on the selected column.

Allow Natural Sort

If **Allow Natural Sort** is set to **False**, a natural sort is not allowed when sorting the grid control on the selected column.

Source Field

This setting selects the field from the **Source Session** to be displayed in this column.

Column Type (Cached Mode Only)

This setting determines the data type displayed in the grid. Available options are **Data** and **SUM**.

- **Data** – Column data added to the grid is entered exactly as it appears in the bound control.
- **SUM** – Column data is entered as a numeric value. If a row is being updated, the existing numeric value will be added to the new value being entered into the grid column.

Filter Tab

It is possible to refine the data results displayed by adding filters to the **Grid Control**.

Filter Name

An editable name used to describe what the filter does.

Filter Operator

The **Filter operator** sets the comparison type when the filter is applied. This comparison can be one of the following values: **Equal**, **NotEqual**, **LIKE**, **GreaterThan**, **GreaterThanOrEqual**, **LessThan**, or **LessThanOrEqual**.

Local Field

The Local Field is the field in the current session used in the filter.

Remote Field
The remote field is the field from the S**ource Session** which is matched against the local field when applying the filter.

Read-Only
When set to **False**, the data in the **Grid Control** can be edited directly in the column.

Cached Mode
Cached Mode changes the way the **Grid Control** displays and stores data. When using **Cached Mode**, the data within the **Grid Control** is not data loaded from the **Source Session**. The data is instead entered from the **Entry Form,** from the bound controls, and stored until the form data is submitted. The data is submitted to the **Source Session** of the **Grid Control** by either submitting the data, or performing a **GridPost** button action.

Cached Mode Options

Beep when row added
When set to **True**, a chime is played when a new row is added to the **Grid Control**.

Beep when row Updated
When set to **True**, a chime is played when an existing row is updated in the **Grid Control**.

Show Toolbar
Displays a toolbar at the top of the grid control allowing you to delete records, delete all records in both **Cached** and **non-Cached Mode**, or submit records when in **Cached Mode**.

Record Count Control ID
The **Record Count Control ID** allows the user to select a field or control on the form that contains the number of rows in the grid. This field is specified by the field's **Control ID**.

Retain Designed Sort
When set to **True**, this option forces a grid control to always apply the selected sort in the entry form. This sort is retained even if a second column is selected. This results in two sorted columns.

Rows Per Page (Android, iOS and PC Only)
Set to the number of rows you wish to display in the grid before paging is required. This will allow you to swipe up and down to view records vs going page to page.

Edit Mode on Record Select
When set to **True**, sets the entry form in an edit mode for the currently selected record. Only available when the **Source Session** is the current session.

5.2.3.8 Timer Properties

Interval
The amount of time, in milliseconds, that must elapse before the timer is triggered.

Loop
Choose whether the timer should run on the set **Interval** indefinitely after the timer is first triggered.

Auto Start on Form Open
Choose whether the timer should start running when the form is opened. When set to **False**, the timer needs to be triggered by the **Timer** button action.

Go to Control ID
The control defined here by its control ID is given focus once the timer triggers. If the control is a button, the assigned button action is executed.

5.3   Data Capture

Enable NFC Scanner (Android Only)
Check this setting to enable a natively supported NFC reader.

Enable Barcode Scanner
Check this setting to enable a natively supported barcode scanner. Non-supported devices rely on a 3rd party keyboard wedge application to capture barcode data into TracerPlus and are unaffected by this option setting.

Enable RFID Scanner
Enable this setting to turn on the RFID scanner for supported RFID Mobile Terminals and supported Bluetooth add-on modules. When enabled, the RFID options listed below become available.

EPC tag format
Select the desired EPC tag format, Hex or ASCII, to read and write tag data.

User tag format
Select the desired User memory bank format, Hex or ASCII, to read and write tag data.

Tag Session
The **Tag Session** is a setting for making inventory events easier to manage. These sessions serve two purposes: Determines how often a tag will respond to a query from the reader and allows for multiple readers to conduct independent inventories. Select from the 4 options below:

- **SESSION_0** – Does not stay Inventoried at all.
- **SESSION_1** – Stays Inventoried for .5 to 5 seconds (Recommended).
- **SESSION_2** – Stays Inventoried for at least 2 seconds.
- **SESSION_3** – Stays inventoried for at least 2 seconds.

Flush Tags
The Flush Tags setting is used to select when the scanner's internal RFID tag list is flushed. The options are described below.

- **InventoryStop** – Clears the tag list when the trigger is released.
- **OnSubmit** – Clears the tag list when the session data is submitted.
- **User** – Allows the user to clear the tag list at the desired time, using a button with a Button Action of **RFIDFlushTagList**.

Scan Stop
This setting is used to configure when the RFID scanner stops scanning. The options are described below.

- **Trigger Release –** Scanning stops when the trigger is released.
- **Tag Read** – Scanning stops after a tag is read.

Radio Power
This option sets the signal strength of the RFID reader; the range for this is 5 – 30 decibels. This is a useful setting when working in different environments. For example, when working in close proximity to a tag, it is sometimes better to use a lower power to achieve better short-range resolution.

User memory bank
Specifies the size, in bytes, of the RFID tag's user memory bank.

EPC Memory Bank
Specifies the size, in bytes, of the RFID tag's EPC memory bank.

Read user memory during scan
When enabled, causes the user memory to be interrogated during the scanning process. This allows both the EPC value and the User Memory bank value to be read into a TracerPlus field at the same time. This requires a **Smart Form** rule be created to direct this data to a field on your form (see below).

RFID Stop Goto Control ID (Set in Form Designer)
Specifies a control to set focus to, or a button to click when an RFID read operation is complete. This value can be defined for any control on the form and is based on the **Control ID** from the form designer. If this control is a button, the defined button action is executed. This will occur when the user releases the scan trigger, or when the user selects a Perform Inventory button to stop a scan.

SmartForm
The **SmartForm** setting forces entered data into a specific field on the form based on user defined rules. This speeds the data collection process while also eliminating data entry error. This feature can be set for any type of data input including barcode scan, RFID read as well as keyboard input. Rules can be added and removed with the toolbar to the left of the **SmartForm**. The rule types are described below.

- **Barcode scan complete** – Forces the barcode data into the selected field when a barcode scan is completed (supported hardware only).
- **NFC read complete** – Forces the NFC tag data into the selected field when an NFC read is completed (supported hardware only).
- **RFID read complete** – Forces the RFID tag data into the selected field when a RFID read is completed (supported hardware only).
  - **EPC memory bank** – Reads the contents of the RFID tag's **EPC** bank.
  - **User memory bank** – Reads the contents of the RFID tag's **User** bank.
- **Data begins with** – Forces data into the selected field when the data begins with the specified character(s).
- **Data ends with** – Forces data into the selected field when the data ends with the specified character(s).
- **Data contains** – Forces data into the selected field when the data contains the specified character(s).
- **Data has length** – Forces data into the selected field when the data is the specified length.
- **BLE Service** – Forces the connected BLE device's data into the selected field when a BLE event is completed (supported hardware only).
- **BLE Beacon Received** – Forces BLE Beacon value (listed below) into the selected field. (supported hardware only).
  - **MAC Address** – The MAC address of the beacon (Android only).
  - **Data** – The raw data of the beacon (Android only).
  - **RSSI** – The received signal strength indication of the beacon.
  - **iBeacon UUID** – The UUID value of the beacon (iBeacons only).
  - **iBeacon Major** – The Major identifier of the beacon (iBeacons only).
  - **iBeacon Minor** – The Minor identifier of the beacon (iBeacons only).
  - **Eddystone UID Namespace** – The Namespace identifier of the beacon (Eddystone UID only).
  - **Eddystone UID Instance** – The Instance identifier of the beacon (Eddystone UID only).
  - **Eddystone TLM Voltage** – The voltage value of the beacon (Eddystone TLM only).
  - **Eddystone TLM Temperature** – The beacon temperature (Eddystone TLM only).

- **Eddystone URL** – The URL of the beacon (Eddystone URL only).
- **Distance** – The Distance to the beacon in meters.

5.4   Import/Export

The data **Import/Export** settings control how data is imported and exported from the **TracerPlus** sessions. These settings are used for local device text file import/export and not related to **TracerPlus Connect** synchronizations. Refer to Appendix D for more info on importing and exporting text data.
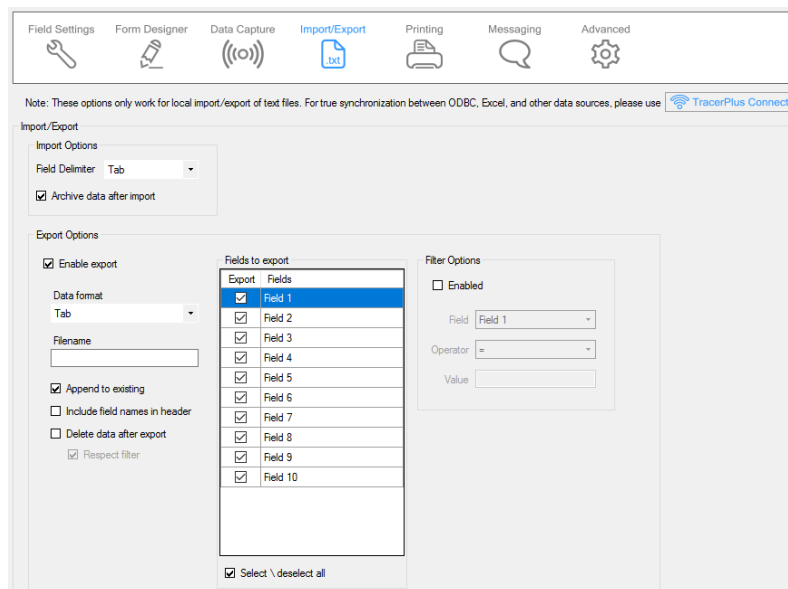
Import Options
Options to be applied when performing a data import.

Field Delimiter
This option specifies what the delimiter type is within the data import file. Delimiters available are **Tab** and **CommaNoQuotes**.

Archive data after import
When **Archive data after import** is selected, any previously imported file is renamed with an "old_" prefix after a successful new import. Import files include both dropdown list contents as well as any session data.

Export Options
Options to be applied when performing a data export.

Enable Export
This option allows the user to enable or disable the data export for this session.

Data Format
This option allows the user to select from one of six possible data formatting types.

Tab
This formatting option separates each field with a tab character. Each record is terminated with a Carriage Return/Line Feed (CRLF).

Comma
This formatting option wraps each field in quotation marks and separates each field with a comma. Each record is terminated with CRLF.

Fixed Width
This formatting option transfers all fields using a fixed width. Any space remaining at the end of field data is padded with spaces. Use the **Max Length** field setting to define the width of each fixed width field. Each record is terminated with CRLF.

XML
This formatting option allows data to be transferred in XML format.

HTML
This formatting option transfers all data in HTML table formats allowing the data to be viewed in a web browser.

Comma No Quote
This formatting option separates each field with a comma. Each record is terminated with CRLF.

Filename (Professional Mode only)
Allows you to name the file exported from this session along with specifying a file extension (.txt, .csv, .dat, etc.).

Append to existing
When this option is selected, new data is added to a pre-existing file. If this option is not selected, any previously transferred data is overwritten.

Include field names in header
When this option is enabled, the user configured field names are included as a header row in the exported file.

Delete data after export
Select **Delete data after export** if the data should be removed from the mobile device database after a successful export.
Respect Filter
When enabled, only data matching the current export filter is deleted.

Fields to export (Professional Mode Only)
This grid provides the user with the ability to choose which fields are exported. If a field is checked in this grid, it will be included in the export data file.

Filter options
The **Filter options** allow the user to control the data to be included in the export process.

Enabled

Checking this option enables the configured filter.

Field

This drop down is used to select which field the filter applies to.

Operator

This dropdown is used to select which operator is to be used for this filter. The operators that are available include: **Equal**, **Not Equal**, **Like**, **Greater Than**, **Greater Than or Equal**, **Less Than**, and **Less than or Equal**.

Value

This field is used to select the value to apply to the filter.

5.5   Printer Settings

TracerPlus enables users to print data directly from **TracerPlus** to a wide variety of printers. The option to configure printer settings is available individually for each session.

Enabled

Enables printing for the selected session.

Manage Reports

Each session supports multiple print reports. Each of which can be sent to different printers. Use the **Manage Reports** toolbar to add and organize the reports to be used for the session. After a report has been added to the list, use the drop down to select from the available print reports. Reports are files that define the layout of the content to be printed. For more information on creating custom printer reports, please refer to the **TracerPlus Print User Guide** included as PC shortcut with this installation**.**

Print What
The **Print What** drop down provides the ability to select the records from the current session that you would like to print. These include:

All records
This setting prints all records in the current session.

Current record
This setting prints the currently selected record. If printing from the **Data View** screen, this is the record highlighted in the grid. If printing from the **Data Entry** screen, the most recently submitted record is printed. If printing via a **Print** button action, this option represents the data currently presented on the screen.

Prompt for filter
With this option enabled, a dialog appears when a print request is made. A filter can be applied to your session data allowing only records matching that filter to be printed.

Start print automatically
When this option is enabled, the print job is automatically started using the default options.

Print on submit
Enabling this feature triggers a print when a record is submitted, regardless of any conditions.

Only if
Check this if you want to enable a condition for print on submit. Doing so allows you choose the field for the filter condition, and the filter value to check for.

Default Filter
Enabling this checkbox allows the user set a default filter on the data that gets printed and is useful when the **Prompt For Filter** option is chosen. The following settings are available:

Field
Select the field you wish to apply the filter based on.

Comparison Type
Choose the filter comparison to be performed (=, <>, LIKE, >, >=, <, <=)

Value
Enter the value that the print should be filtered on. This can be a static value, or can be dynamic by entering a TracerPlus Field Token (IE: [*2*] for Field3).

Connection type
The **Connection Type** drop down allows you to select the connection type you wish to make to your printer. The three connection options available are **TCP/IP** and **Bluetooth**.

TCP/IP
TCP/IP connection type is used when connection to an Ethernet networked printer is required. This is commonly used if the printer offers an 802.11 wireless interface (Wi-Fi) or if the printer is attached to

the same Ethernet network as a wireless device. The settings required are the printer's IP address and IP port.

Bluetooth

The **Bluetooth** option allows connection to a **Bluetooth** compatible printer. For Android Devices, the only required option for this setting is the **Pair Name**. This name must match the name you configured when pairing your printer to your mobile device.

5.6   Messaging (Professional Version Only)

The **Messaging** option enables users to send email reports and text messages that reference session data. This option requires an active email or text messaging account configured on the device.
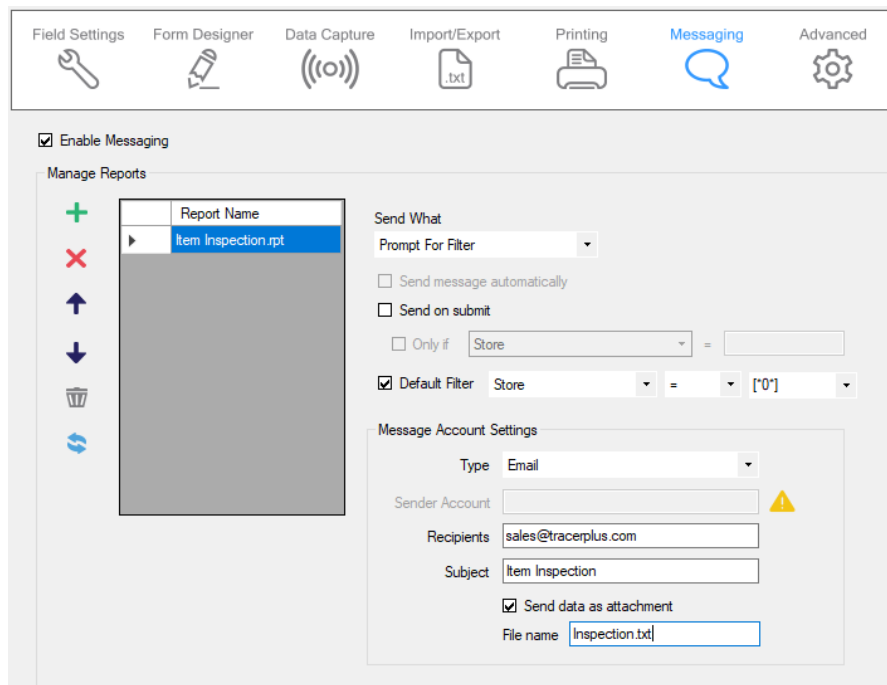
Enabled

Click to enable messaging for the selected session.

Manage Reports

Each session supports multiple message reports. Use the **Manage Reports** toolbar to add and organize the reports to be used for the session. After a report has been added to the list, use the drop down to select from the available message reports. Reports are files that define the layout of the content to be sent. For more information on creating custom message reports, refer to Appendix B of this guide regarding message format options.

The **Send What** drop down provides the ability to select the records from the current session that you would like to send. These include:

All records

This setting sends all records in the message.

Current record
This setting sends the currently selected record. If messaging from the **Data View** screen, this is the record highlighted in the grid. If messaging from the **Data Entry** screen, the most recently submitted record is sent. If messaging via a **Message** button action, this option represents the data currently presented on the screen.

Prompt for filter
With this option enabled, a dialog appears when a message request is made. A filter can be applied to your session data allowing only records matching that filter to be sent.

Send message automatically
When this option is enabled, the message is automatically sent using the default options.

Send on submit
Enabling this feature triggers a message when a record is submitted.

Only if
Use the **Only If** option to limit when a message is sent during a submit by using a filter. Setting a filter causes the **Send on Submit** to occur if the filter condition is met.

Default Filter
Enabling this checkbox allows the user set a default filter on the data that gets sent and is useful when the **Prompt For Filter** option is chosen. The following settings are available:

Field
Select the field you wish to apply the filter based on.

Comparison Type
Choose the filter comparison to be performed (=, <>, LIKE, >, >=, <, <=)

Value
Enter the value that the message should be filtered on. This can be a static value, or can be dynamic by entering a TracerPlus Field Token (IE: [*2*] for Field3).

Message Account Settings

Type
This drop down determines whether the message will be sent as an email or a text message.

Sender Account
This is an email account configured on the device and used to send the report. When the **Type** is set to SMS text message, this field is disabled.

Recipients
When sending an email, enter the email addresses of all intended recipients separated by a semi-colon. To send an SMS text message, enter the recipient's complete phone number; do not enter hyphens or parentheses. This information can also be overridden by directives in a custom **.rpt** file using report variable options. Refer to Appendix B for more information on report variable options.

Subject
For email, this is the subject line sent in the email. This option is not used when sending text messages. This value can also be overridden within a custom **.rpt** file using report variable options. Refer to Appendix B for more information on report variable options.

Send data as attachment
When enabled, attaches a data file to the email instead of including the data in the body of the email.

> **File Name**
> Specify the file name and extension of the email attachment.

5.7   Advanced Settings

Start on field
Select the first field the user is focused on when launching the **Data Entry** screen.

Start on screen
This option determines the screen to first load when running TracerPlus. This setting refers to the last used session in TracerPlus to determine which session **Start On Screen** value to use.

Key field
The **Key field** is used to improve search and sort performance in large data sets by creating index files based on unique fields. By designating a field as a **Key field,** a much faster way to search the database is provided.

Edit on scan/Find in Grid
Select **Edit on scan/Find in Grid** to automatically open records in the **Data Entry** screen when a record is located using the **Find** option on the **View Data** screen.

Edit on click in Grid
Select **Edit on click in Grid** to automatically edit a record in the **Data Entry** screen when clicked in the **Data View** screen. Please note that when this option is selected, it is not possible to delete a single selected record from the grid.

Retain grid filter settings
In the TracerPlus **Data View** screen, users can filter data to optimize searches based on a selected field and input value. When the **Retain grid filter settings** option is selected, this filter is not cleared when entering the data entry form. The filter can be cleared or changed manually and is cleared automatically when a session is closed or TracerPlus is shut down. When the filter is active, all data entry queries respect the filter and record counts also reflect the filter count. When this option is enabled, a filter icon alerts the mobile user of the filtering status during data entry.

Read-only
When checked, this session data is **Read-only**.

View Data Grid: Rows Per Page (Android, iOS and Windows only)
Select whether to limit the number of rows displayed on the data view page to the height of the page, or set a specific number of rows (max 100) before needing to move to the next page of data.

Notes
Use this **Notes** field to make session design notes or comments for future reference. These notes are not shown in the project file on the mobile device.

Record Update Options

Append record
When **Append record** is selected, records are always added to the data table when submitted.

Update existing record
When **Update existing record** is enabled, the submitted record, if found, is updated with the current data entered on the entry form.

Append if not found
This allows new records to be submitted to the database even if the record is not found.

Based on
The **Based on** field(s) is used to locate the record before an update. At least one **Based on** field must be selected from the session's available fields.

Submit on error
When **Submit on error** is enabled, data that fails field or record level validations is still submitted to the database.

Goto Control ID (Set in Form Designer)
This option is used to define where to set focus when a record is submitted. This value can be defined for any control on the form and is based on the **Control ID** from the form designer. If this control is a button, the defined Button Action is executed.

Chapter 6: Form Logic and Actions

The Form Logic Settings within TracerPlus Desktop allows for complete control over the current state of the form. Using Form Logic, a user can completely customize the look and feel of the form based on the current state of the form. A large number of Actions are available to both control this look and feel and modify the data on the form as needed.
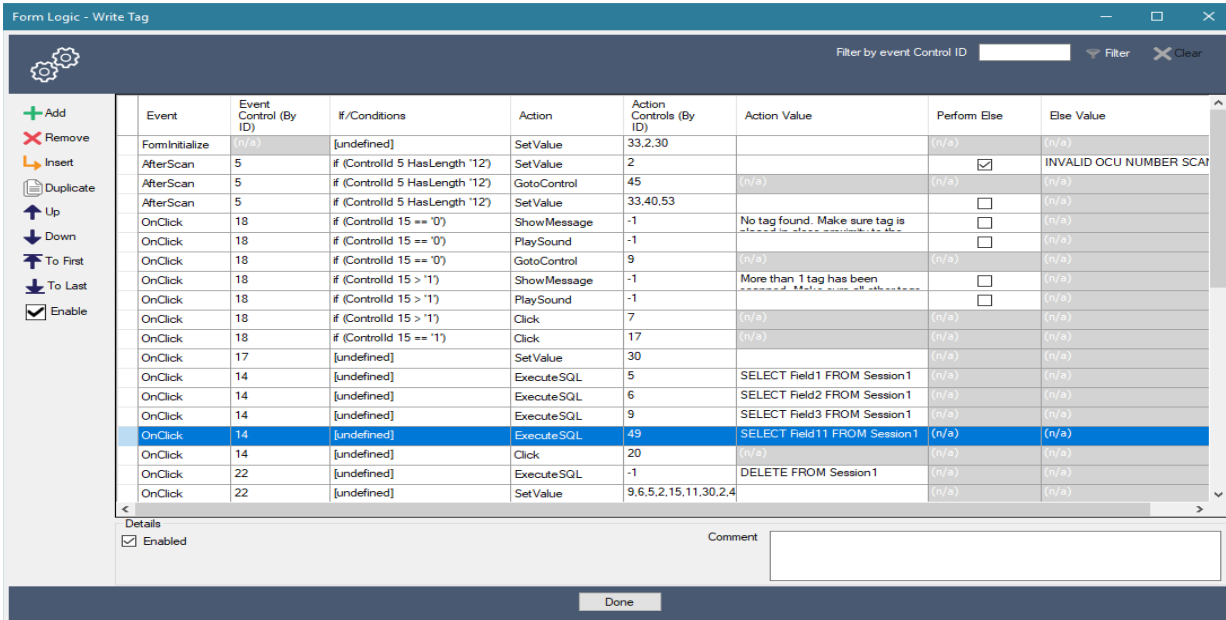
6.1 Form Logic Toolbar

Use the Form Logic toolbar to add, remove and control the order of all the logic items configured on the form.

Add
Adds a new Logic Item to the list.

Remove
Removes the currently selected Logic Item(s) from the list.

Insert
Inserts a new row above the selected row.

Duplicate
Duplicates the currently selected Logic Item(s) in the list.

Up
Moves the currently selected Logic Item up within the list.

Down
Moves the currently selected Logic Item down within the list.

To First
Moves the currently selected row(s) to the top of the list.

To Last
Moves the currently selected row(s) to the bottom of the list.

Enable
Enables/Disables the currently selected row(s).

6.2   Logic Item List

The Form Logic within the user's form is comprised of a list of logic items. These logic items are triggered by an action on your form, specified in the Event category on the Logic List. The logic items will perform and Action on the form specified in the Action category of the Logic List. Finally, this action will only be performed if the Conditions defined in the If/Condition category are met.

Event
The Event defines what happens on the form when the current Logic Item is triggered. There are a number of different options for triggering a Logic Item. They are all described below.

OnFocus
Event that occurs when a field gains focus.

LostFocus
Event that occurs when a field loses focus.

AfterScan
Event that occurs when a TracerPlus AfterScan event is fired. This includes a scan event, enter key pressed in a field, down key pressed in a field, tab key pressed in a field, or a drop-down selection is made.

FieldValueChanged
Event that occurs when a value in a field changes.

FormInitialize
Event that occurs when a form is first opened or immediately after a submit occurs and the form refreshed to defaults.

OnClick
Event that occurs when a button on the form is clicked.

ValidationFailed
Event that occurs when a field validation fails.

ValidationSuccessful
Event that occurs when a field validation is successful.

CalcRefreshed
Event that occurs when field calculation is done refreshing.

LookupRefreshed
Event that occurs when a lookup field has been refreshed.

OnSubmit
Event that occurs when a record submit has been performed on the form.

SyncComplete
Event that occurs when a data synchronization with TracerPlus Connect has completed.

LiveModeConnected
Event that occurs when a TracerPlus Connect live connection has been established.

LiveModeDisconnected
Event that occurs when a TracerPlus Connect live connection has been ended.

CachedGridInsert
Event that occurs when a new row is inserted into a cached grid.

CachedGridUpdate
Event that occurs when a row in a cached grid is updated by a bound control.

Event Control (By ID)
The Event Control ID specifies which control on the form is the one that should trigger the selected Event. In some cases, this is not available. Events like **OnSubmit**, and **FormInitialize** will not use this property since no control fires those specific events.

If/Conditions
This section allows a user to specify the conditions that must be met in order for the Logic Item to perform the Action. If these conditions are not met the user can specify an Else Action which will be performed when the conditions fail. To configure the conditions for a Logic Item simply click in the If/Conditions cell and a popup will be displayed to configure the conditions.

Condition Control (By ID)
The control on the form, specified by the Control ID that will be used in the condition evaluation.

Comparison Type
The method of comparing the Condition's Value to the value in the specified Control. This can be one of the following: Equal (=), Not Equal (<>), Greater Than (>), Greater Than or Equal (>=), Less Than (<), Less Than or Equal (<=), StartsWith, EndsWith, Contains, or HasLength.

Value
The value to compare against the value in the selected Condition Control. This can be either a static value entered into the Value cell, or a field token can be entered so that the current value in the specified field will be used in the evaluation. Field tokens are in the form [*n*] where 'n' is the zero-based field index. For example, [*4*] would take the value currently entered into field 5 on the form.

AND/OR
When using multiple conditions use the **AND/OR** radio buttons to select how multiple conditions will be combined in the evaluation.

Action
The Action category of the form logic item defines what happens on the form when the event occurs and the condition (if any) is met. The Actions are described below:

Click
Performs a click of a button on a form. Not valid for any other control type.

CustomFunction (Android/iOS/PC only)
Add advanced functionality to your configurations by using JavaScript to create custom functions. Visit the TracerPlus Knowledgebase for more information.

ExecuteSQL
Executes a SQL query against the TracerPlus database. This is not supported against live data when a TracerPlus session is configured for live mode.

GotoControl
Sets focus to a control.

GotoPage
Sets the active tab page of a tab control.

PlaySound
Plays a sound file. This must be a .wav file that is available on the mobile device.

Refresh
Refreshes a control's contents.

SetBackColor
Sets a control's background color.

SetFont
Sets the font of a control.

SetForeColor
Sets a control's fore color, this is generally the font color of the specified control.

SetPosition
Sets the position of a control on the form. This position is specified by the Top, Left, Height and Width of the control.

SetReadOnly
Sets a control to a read only state if True, and not read only if False.

SetValidationEnabled

Turns on or off the validation of the field associated to the selected control. This can be used to override the validation settings configured in the field settings.

SetValue

Sets the text value of a control. If the control is a field this will enter the current text for that field. If the control is a label, it will change the caption of the label.

SetVisible

Sets a control's visibility.

ShowMessage

Displays a message on the screen.

TriggerAfterScan

Triggers an after scan event on the specified Action control.

ValidateField

Performs a field validation.

Action Controls (By ID)

Specifies the control on the form that will be used in the Action. In some cases, this value is used to set focus to that control, or in the case of a button the control will be clicked, after the action is performed. This includes the Actions of **ShowMessage**, and **PlaySound**. In the case of **ExecuteSQL** this value is where the resulting SQL result will be displayed.

Action Value

The value to be used on the specified control. This value is dependent on the Action selected.

Perform Else

Specifies whether or not an else branch will be performed when the conditions specified fails evaluation. If no conditions are specified this will be forced to False.

Else Value

The value of the Action that will be used when the conditions evaluate to False. If no conditions are defined this option will not be available.

Details Panel

At the bottom of the logic list there is an additional panel for further settings when a logic item has been selected.

Enabled

Enables or Disables the selected logic item.

Comment

Optional field to comment on the selected logic item. This option has no effect on the logic item, other than to describe the item for a user.

Chapter 7: Building and Deploying your Project

The build process is used to turn your project into a complete configuration ready to be sent to one or more devices. To access the Build/Deploy form click **Tools→Build/Deploy**, or use the button described in Chapter 3.

7.1 Build Options

Here the user can choose to build/deploy a project to a connected client (handheld or PC), or simply build it for later deployment.

Build only
Use the **Build only** option if you wish to only build your project at this time.

Build and deploy
Select **Build and deploy** if you wish to both build the configuration, and copy it to the connected mobile device.

Select Platform
Select the platform you wish to deploy to.

7.2 Building and deploying your project

Android Connection Options
When deploying to an Android device, a connection type must be selected. These connection types are detailed below.

Use Deploy Server
Generates a QR code that will be displayed on screen and can be scanned via the devices camera to deploy projects remotely without requiring a USB connection to the PC. From this same dialog, the IP Address can also be modified rebuilding the QR code with the new address. To send this QR Code to remote users click the **Save QR** Code button.

> **Note:** To access the Deploy Server on the mobile device, the mobile user must access the **Download Project** option from the menu within the TracerPlus application. See Section 7.3 for more info on using the **Download Project** function.

Use Portable Device (MTP)
Deploys the project using the **MTP** connection method. Select the connected Android device from the device drop down you wish to deploy to.

Android Debug Bridge
Deploys the project using the Android Debug Bridge. You must enable **USB Debugging** in the **Developer Options** on your Android device, and have installed the **ADB** driver for your PC to enable this option.

Mapped Drive
This option deploys the project to a connected Android device that has connected as a mapped drive.

iOS and PC Connection Options
When deploying to an iOS device, or Windows PC a connection type must be selected. These connection types are detailed below.

Use Deploy Server
Generates a QR code that will be displayed on screen and can be scanned via the iOS devices camera to deploy projects remotely without requiring a USB connection to the PC. From this same dialog, the IP Address can also be modified rebuilding the QR code with the new address. To send this QR Code to remote users click the **Save QR** Code button. Windows PC users can simply enter the IP Address and port info via the Manual Deployment option below.

Deploy
Press the deploy button to deploy your project to the connected mobile device.

Close
Press Close to close the Build/Deployment dialog and return to the project.

7.3   Device Side Wireless Deployment (Android, iOS and PC Only)

To complete the wireless deployment to the device the project needs to be downloaded using the **Download Project** dialog on the device. To Access this dialog, select **Menu➔Download Project**.

Scan QR Code
Press the **Scan QR Code** button to download the project using the QR Code generated in Section 7.2 or using the **Deploy Server Manager** detailed in Chapter 9. After clicking **Scan QR Code**, scan the QR code using the device's built in 2D barcode scanner. If the device is not equipped with a 2D scanner, click the **Use Camera** button to scan the QR Code using the device's built-in camera. Upon successful download of the project, the dialog will close and the project can be updated by clicking the **Home** icon.

Manual Deployment
If the QR Code deployment feature is not used, enter the IP Address and Port of the deployment server to the **Address** text box in the format of 192.168.20.97:4409 as an example. Use the **Project** drop down to select the project desired, then click the **Download** button to complete the project deployment. The **Refresh Projects** button will retrieve the full list of available projects from the Deployment Server. Upon successful download of the project, the dialog will close and the project will be updated.

Note: After a QR code deployment, the server info and downloaded project will be added to this dialog. Further updates to this project can be deployed using this dialog and just clicking the **Download** button as opposed to going through the process of scanning the QR Code again.

Chapter 8: Importing and Exporting Projects

It is possible to import/export your **TracerPlus Desktop** projects. The import/export procedures described here enable users to share **TracerPlus** projects with customers, end users and the **TracerPlus** community.

8.1 Project Export

To export a project, choose the **File→Export** option from the menu. You are presented with the **Export Project** dialog. After entering the information described below, click the **Export** button to export your project.

> **Export To**
> The **Export To** field displays the save location of the exported file. To change the location, click the browse button and navigate to the desired location.
>
> **Created On**
> This property is a read-only time stamp marking when the export file was created.
>
> **Revision**
> This field provides the project creator with the opportunity to assign a version number to the exported file.
>
> **Author**
> This field can be used to identify the creator of the project.
>
> **Password**
> Enter a password to protect this project from being modified by anyone else unless they have the password.
>
> **Comment**
> The **Comment** field allows the author to include a note with the exported file.

8.2 Project Import

To import a project, choose the **File→Import** option from the menu. You are presented with the **Import Project** dialog. You can choose to import your project from the two different sources listed below. If the project is password protected, you will need to enter the correct password to continue importing the project to modify it. You can deploy the project to your device if you do not have the password.

> **From file (.tpe)**
> Choose this option to import a project from a **TracerPlus Desktop** export file (.tpe).
>
> **From TracerPlus.com**
> Choose this option to import a project from the **Tracerplus.com Solution Center**, an online library of free, premade apps ready to be deployed. This option can also be accessed from the **Welcome** screen, by clicking the **Samples** button.

Follow the on-screen instructions to complete the import process.

Chapter 9: Deploy Server Manager (Android/iOS/PC only)

TracerPlus Desktop allows you run a TracerPlus Project Deploy Server right from your PC. The Deploy server allows your mobile users to download a project from your server at any time simply by scanning a QR code or selecting a project from a presented drop down list on the mobile device. This eliminates the requirement to have a mobile device connected to your PC in order to deploy a new project.

Deploy Server Status
Displays the current status of the deploy server along with the option to Start and Stop the server. This must be running in order to use the Deploy Server feature. This is set to stopped by default however can be set to start automatically when TracerPlus Desktop starts via the **View→Preferences** dialog within TracerPlus Desktop.

Address(es)
Displays the current IP address the Deploy Server is running on. This is typically the IP address of the PC TracerPlus Desktop is installed to. This address can be modified during the QR Code deployment method if needed.

Port
Displays the current port the Deploy Server is using and should be open on your firewall. This is set to port 4409 by default. This port can be changed in TracerPlus Desktop via the **View→Preferences** dialog.

9.1 Tools

Rebuild
Select a project from the grid and click the **Rebuild** button to rebuild the project for deploy without having to open the project in TracerPlus Desktop. This will also update the selected project with any changes that have been made to it.

QR Code
Select a project from the grid and click the **QR Code** button to generate a QR Code. This QR code can be scanned within TracerPlus on the mobile device to load the selected project to the device. Alternatively, this QR code can be saved as an image and sent via email to any users who may not have access to the QR code presented on the screen. The Deploy Server IP Address and Port are embedded into the QR code and is how the device knows how to communicate back to the deploy server.

Add
Click the Add button to add a new project to the Deploy Server library

Remove
Click the Remove button to remove a project from the Deploy Server library

9.2 Project Grid

The Project grid lists all of the projects available to your mobile devices when accessing this Deploy Server. Information about each of the projects is presented in the grid along with the ability to enable or disable any given project from being available for deploy via the Deploy Server.

- **Enabled** – Enable whether or not a project is accessible via the Deploy Server.
- **Alias** – Used to give the project a name other than the project name and what is displayed in the Project Download list on the device.
- **Name** – Displays the TracerPlus Desktop given Project Name.
- **Location** – Displays the location of the TracerPlus Desktop Project.
- **Last Build** – Displays the date/time the project was last Built.
- **UUID** – Displays the unique identifier for the project generated at the time the project is created and never changes.
- **Revision UUID** – Displays the unique identifier for the current revision of the project and changes each time the project is rebuilt.

Note: To access the Deploy Server on the mobile device, the mobile user must access the TracerPlus **Download Project** option from the menu within the TracerPlus application. Please see Section 7.3 form more info on downloading these projects.

Appendix A: Date and Time Formatting Characters

d	The one-digit or the two-digit day.
dd	The two-digit day. Single-digit day values are preceded by a zero.
ddd	The three-character weekday abbreviation.
dddd	The full weekday name.
gg	The period and era string that is contained in the CAL_SERASTRING value that is associated with the specified locale. Windows CE ignores this element if the date to be formatted does not have an associated era or period string.
h	The one-digit or the two-digit hour in 12-hour format.
hh	The two-digit hour in 12-hour format. Single-digit values are preceded by a zero.
H	The one-digit or the two-digit hour in 24-hour format.
HH	The two-digit hour in 24-hour format. Single-digit values are preceded by a zero.
m	The one-digit or the two-digit minute.
mm	The two-digit minute. Single-digit values are preceded by a zero.
M	The one-digit or the two-digit month number.
MM	The two-digit month number. Single-digit values are preceded by a zero.
MMM	The three-character month abbreviation.
MMMM	The full month name.
t	The one-letter A.M. and P.M. abbreviation (that is, "AM" is displayed as "A").
t'''M'''	The two-letter A.M. and P.M. abbreviation (that is, "AM" is displayed as "AM").
y	The year is displayed as the last two digits, but with no leading zero for any year that is less than 10.
yy	The last two digits of the year. For example, 1998 would be displayed as "98".
yyyy	The full year. For example, 1998 would be displayed as "1998".
z	Julian Date. Integer assigned to a whole solar day in the Julian day count.

Appendix B: TracerPlus Email Message Report Sample

Sample format using advanced features
The following is a sample report using all the previously described elements. The end result is a mobile inspection report available for emailing.

This example may be useful because it discusses how to use these provided reports in conjunction with TracerPlus data. This example also includes a brief discussion on how **images** and **signatures** can be attached to an email message.

```
<format>
<definevars>
<var  name ="date"                        type="DB"  source="field1"/>
<var  name ="location"          type="DB"  source="field2"/>
     <var  name ="item1"              type="DB"  source="field3"/>
     <var  name ="item2"              type="DB"  source="field4"/>
     <var  name ="item3"              type="DB"  source="field5"/>
     <var  name ="item4"              type="DB"  source="field6"/>
     <var  name ="item5"              type="DB"  source="field7"/>
     <var  name ="photo"             type="BIN"  source="field8"/>
     <var  name ="inspector"         type="DB"  source="field9"/>
     <var  name ="signature"         type="BIN"  source="field10"/>
     <var  name ="message_subject"     type="DB"  source="field11"/>
     <var  name ="message_recipients"  type="DB"  source="field12"/>
</definevars>
<printerdata>
        <formatheader max_records_per_page="1">
        </formatheader>
<pageheader>
<br/>
New Inspection Report<br/>
Date: <var name="date"/><asc>0D</asc>
Location: <var name="location"/><asc>0D</asc>
<br/>
Inspection Items:<br/>
</pageheader>
<record>
Item 1: <var name="item1"/><asc>0D</asc>
Item 2: <var name="item2"/><asc>0D</asc>
Item 3: <var name="item3"/><asc>0D</asc>
Item 4: <var name="item4"/><asc>0D</asc>
Item 5: <var name="item5"/><asc>0D</asc>
<var name="message_subject" disableprint="1"/>
<var name="message_recipients" disableprint="1"/>
</record>
<pagefooter>
```

```
<br/>
Inspector: <var name="inspector"/><asc>0D</asc>
<br/>
Attachments:<br/>
<var name="signature"/><asc>0D</asc>
<var name="photo"/><asc>0D</asc>
<br/>
<asc>0C</asc>
</pagefooter>
<formatfooter>
</formatfooter>
</printerdata>
</format>
```

<definevars>

This section of a report defines the variable data for a messaging report. These definitions allow you to define variables that are assigned to specific fields within a TracerPlus session. In this example, we have defined the following variables:

Date, Location, Items 1-5, Photo, Inspector, Signature, Subject and Recipients

Each variable definition contains information about the datatype along with the TracerPlus field mapping for use in obtaining the dynamic data associated to that variable. Note that variables of type **DB** indicate text data that is intended to be inserted into the report. Variables of type **BIN** indicate binary data that are intended to be included in this email message as attachments.

<formatheader>

Every report contains a format header which usually contains additional parameters relative to the overall report. In the example above, the only setting required in this area is the number of inspection records to include in this report. Since this inspection report is only emailing data on one specific site inspection, this value should be "**1**" as shown.

<pageheader>

Every report also contains a page header section which allows you to define elements that appear on every page. In the example above, since there is only one page, this contains simple header type information for the body of the email message being prepared. The title of this sample report is "New Inspection Report". Also included in this header are the date and location of this particular inspection. It is worth noting that both of these values are referencing data from TracerPlus via the respective variable definitions.

<record>

The record section of a report allows you to define the section(s) of the report that will print for every record included in this message. In the example above, this will only represent one record since we are only creating one inspection report from one record.

In this example, the data being referenced here are Items 1-5. These items are generic to this example but might reflect certain inspection items for a given location.

<pagefooter>

The pagefooter allows any summary type data to be sent. In this example, there are simply 2 references to the associated attachment files; the signature and photo.

message_subject

This variable setting allows you to reference a specified field in the TracerPlus data to use as your email subject. This allows the subject to vary based on the data being sent, and overrides the **Subject** setting defined in the **Messaging** section.

message_recipient

This variable setting allows you to reference a specific field in the TracerPlus data to use for your email recipient(s). This is useful when the email address is driven by the data being entered, and overrides the **Recipient** setting defined in the **Messaging** section.

Appendix C: Field Input Example

Field Input Sample - Exit Polling Application

This Project is available for free download at www.tracerplus.com in the online Solution Center.

In this sample, the **Field Input** is used to capture Exit Polling information. The end result is a simple form allowing a user to select the appropriate candidate using one of four buttons on the form. Each of these buttons are set as **Field Input** buttons and they enter the selected candidate into the **Candidate** field (the Target Control). In this case the **TriggerAfterScan** is set to **True** which enables the **Auto Submit** set in the Field settings to automatically save the selected candidate, then clear the field for the next entry.
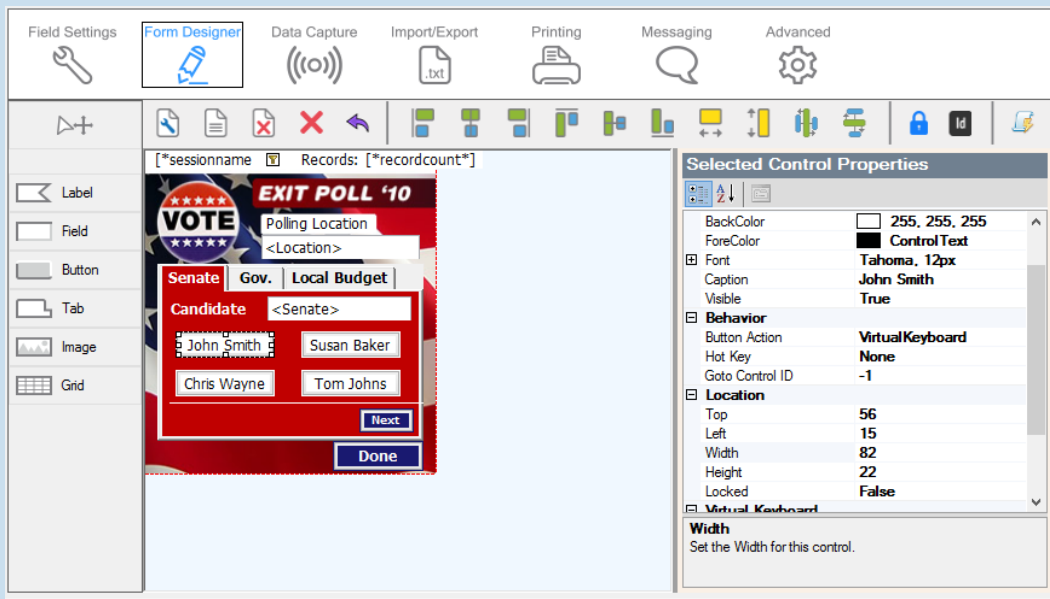
Setting the Field Input properties

The **Target Control ID** value has been set to **3** which in this example matches the **System>Control ID** of the **Candidate** field above the buttons. Overwrite has been set to true so each time a user selects a candidate it enters **only** that value in the field. **TriggerAfterScan** causes the candidate to be submitted since the Candidate field has auto submit set. Lastly, the **String Value** is set to the candidate's name. This is the value entered into the Candidate field and recorded in the database when the button is pressed.

Appendix D: Text Data Import and Export

Although **TracerPlus Connect** is recommended for data syncing to and from ODBC, Excel and Text sources, users also have the option to manually import and export text data. This requires the manual steps outlined below.

Importing Text Data
TracerPlus users can manually import both drop down and session data. Follow the instructions below for importing data into the **TracerPlus Mobile Client**.

Importing Drop Down Data
Data can be imported to drop down fields by placing a text file into the
\Android\data\com.pts.tracerplus\files\data\for_import folder of your connected device. This file should be named in the format of **SxxFyy.txt** where **xx** = the session number and **yy** = the field number (e.g. S02F05.txt would import drop down values to field 5 in session 2). The file should contain each drop down value separated by a carriage return. When using drop down filters or DB Values, this data should be separated by a tab character. Once copied to the device, select **File→Import Data** to import the drop down list(s). Alternatively, appending a **_auto** to the text filename auto imports drop down data when TracerPlus is launched on your device.

Importing Session Data
Data can be imported to a session by placing a tab-delimited text file into the
\Android\data\com.pts.tracerplus\files\data\for_import folder of your connected device. This file should be named in the format of **Sxx_data.txt** where **xx** = the session number (e.g., S03_data.txt would import data to session 3). Once copied to the device, select **File→Import Data** to import this session data. Alternatively, appending a **_auto** to the text filename auto imports the session data when TracerPlus is launched on your device.

Custom Import
Custom importing allows you to control which TracerPlus session to import data into and where that data comes from. This differs from general importing in that it enables you to only choose an individual session to import into instead of all sessions. To perform a **Custom Import**, select the Session to import into, then select the data file you wish to import.

Exporting Text Data
Data can be exported from TracerPlus by selecting the **File→Export Data** option, or by clicking a button on your form that has a button action of **ExportData**. This exports data for any session it is enabled for to the *\Android\data\com.pts.tracerplus10\files\data\exported* folder of your device. The formatting of this data export is configured via the settings described in Section 5.4. When exporting data containing images or signatures, these files are saved to a **Bin** folder located in the directory referenced above.