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# FACTORY SUPPORT AND SERVICE

For Return Material Authorization (RMA) numbers please telephone: 905-624-3020

For service information and other requests please FAX: 905-238-5053

# **FCC/Industrial Canada Warnings**

\* This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the equipment manufacture for help.

\* Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

\* The transmitter and antenna must not be co-located or operating in conjunction with any other antenna or transmitter. Failure to observe this warning could produce an RF exposure condition.

\* The operation of this device is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

\* This device has been designed to operate with the antenna unit included in the system. Use of any antenna device other than the one included is strictly prohibited.

# MANUAL REVISIONS

The complete revision detail list is found in Appendix-Document Revision Control.

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### New Features for this software version

For the T500 Tag Programmer - PC Software (700371-003) version 1.99.03.24 or higher...

#### Description...

Maintenance release of T500 tag programming station PC software. This version has been qualified.

#### New Features...

- New option to clear unassigned agency and scratchpad fields. Default setting for the scratchpad fields: clear bits (Toll collection, traffic management fields). Default setting for unassigned agency bits: not cleared. Default setting for unassigned scratchpad bits: clear bits.
- 2) The DLL file is checked for the proper version. The program does not continue if the wrong DLL version is in use. The correct version is dated Mar. 12-99, size 69120 bytes.

#### Enhancements...

- 1. Provided a "no change" template option for agency fields. This allows modifying specific fields in a tag without modifying other fields.
- 2. The Help | About menu item now displays the TPU firmware version in addition to the PC software version.

#### Problem Fixes...

- 1. When the width of a custom agency or scratchpad field is changed, the value of the field will be set to 0.
- 2. Vehicle class changes in agency tab display (tractor length changed from 53' to 48', removed definition for vehicle type 16) per document "E-Z Pass Interagency Group / Tag Data Format/Content" dated 12/22/98.
- 3. No other known problem to date.

#### Reference documentation...

Customer: T-500 Tag Programming Station – User Manual (A316000-699) Customer: T-500 Tag Programming Station – Data sheet Customer: T-500 Tag Programming Station – DLL Interface (Sept. 25, 1998) Internal: T-500 Tag Programming Station – SW Requirements (TS 322749-047 Feb. 5th, 1999)

#### Software Installation Notes...

Installation is compatible with Windows -9x or -NT 4.0. Close any open programs before starting the installation. You may see a message "*Could not register MFC42.dll*". Hit OK and the installation will continue. This PC software must be used in conjunction with the following TPU firmware version:

TPU Firmware (800473-009) Version TPS102R - Checksum 45AF

#### Developer Notes

It is possible for a 3<sup>rd</sup> party developer to not use the Mark IV user interface and read / program tags directly via the DLL interface. Contact Mark IV for details.

### **System Installation Notes**

#### Environmental Notes...

The installation environment for this equipment must include a method of control for...

- temperature
- humidity
- dust

#### Mains Power Notes...

• It is strongly recommended to install a UPS for the TPS computer.

# **Abbreviations Used**

| Abbreviation | Meaning                       |
|--------------|-------------------------------|
| AU           | antenna unit                  |
| RF           | radio frequency               |
| T500         | an alternate name for the TPS |
| TPS          | tag programming station       |
| TPU          | tag programming unit          |
| UPS          | uninterrupted power supply    |

# **1.0 TPS Components and Interconnection - Overview**

The system components are shown below.

# 1.1 Front view of TPS system components:



See Note in previous diagram

Comments

### 1.2 System component interconnections

| Cable ID | Part N <sup>e</sup> | From                      |
|----------|---------------------|---------------------------|
| 1        | 326595-001          | TPU RF Control port       |
| 2        | 326595-002          | TPU Host port             |
| 3        | 800824-001          | TPU RF coaxial cable port |
| 4        | 314922-004          | TPU power port            |

AU *RF Control* port PC serial port AU RF coaxial cable port 120VAC mains wall socket





# WARNING

\* The transmitter and antenna must not be co-located or operating in conjunction with any other antenna or transmitter. Failure to observe this warning could produce an RF exposure condition.

\* To comply with RF exposure requirements the unit must be installed and operated with a separation distance of 20 cm or more between the device and all person's body (excluding extremities of hands, wrist and feet).

\* This device has been designed to operate with the antenna unit included in the system. Use of any antenna device other than the one included is strictly prohibited.

# 1.3 Tag "cradle" inside the AU drawer

The tag cradle is shown at right in a "top view" photo (of the AU drawer pulled out). The cradle shown in the photo at right is configured to accept various Fusion or Type 2 LCD tags. A separate AU drawer<sup>1</sup> has a cradle that is configured to accept various FPT, RMT or LPT tags.

Drawers are easily exchanged by slipping them on and off from the drawer glides as shown in the photo below.



Lift up on the black plastic locks on both sides of the drawer while gently pulling the drawer up and out from the slides.

Reverse the procedure to install a drawer. Pull the slides out frontward as far as possible to re-engage the locks. Both locks must "click" into place.





### IMPORTANT...

The correct alignment of the tag in the cradle is vital to the programming process. When placing any tag into the cradle, ensure that the applicable alignment diagram (or photograph) is referenced. For details, refer to *Appendix - Positions of tags in the AU drawer "cradle"*.

<sup>&</sup>lt;sup>1</sup> This feature will be changed to a single drawer for all tags. Refer to the notes on page 2 of Appendix - Hardware.

# 2.0 Getting started - Installation Overview

#### This section is an <u>overview</u> of what you will do to install the program and to start programming tags.

The TPS components are interconnected as shown in the previous section.

An "*installer*" will install the TPS program for the first time separately on each TPS computer. The *installer* will use the password "**doinstall**" which is valid only for the install procedure. The installer will require the "authorization code" for each TPU previously sent to the agency or service center contact person. For security purposes, the authorization code is set differently on each TPU shipped.

The *installer* <u>must</u> add at least one supervisor to the User ID file. Then the *installer* must exit (log off) from the program. The *installer* is not allowed to start up and/or log into the program again.

Now, one of the supervisors listed in the User ID file must log in and create a password. The supervisor may now add (or remove) the other system users and/or supervisors. Note that the TPU does not have to be connected to the computer to perform this function.

Now, each one of the users in turn use their ID to log on and put their password into the User ID file. Each user then logs out then logs in again using the password to gain access only to the user menu items.

At this point the TPS will be <u>properly</u> setup to program tags. For larger batches of tags, the supervisor may selectively automate the programming activity.

The TPS program is normally running all the time. A supervisor or a user will log in and out as required. The system accepts only one person to be logged in at a time. The program menu items are automatically enabled/disabled for the user type that is currently logged in.

### **IMPORTANT**

It is strongly recommended to install a UPS for the TPS computer.

With the exception of a power failure, the TPS program is intended to run continuously, however...

- 1. Supervisors must always use the "Exit" menu command if the program is ever terminated.
- 2. Always "Exit" the program before shutting down the computer for any reason.
- 3. You must be familiar with the care and use of the TPU.
- 4. Read the Appendix Hardware Setup in this manual before using the TPS system.

### 2.1 A note about "forgotten" passwords...

- If a user forgets their password then any supervisor may simply erase that user from the list and then reenter the same name in the list again. That user must re-create a password when logging in.
- If a supervisor forgets their password then any other supervisor may simply erase that supervisor from the list and then re-enter the same name in the list again. That supervisor must re-create a password when logging in.
- If there is only one supervisor in the list and that supervisor forgets their password then the following procedure must be taken.
  - 1) Erase the current list of users and passwords by erasing the file "*tps.cfg*" in the Windows directory.
  - 2) Re-install the TPS program and re-setup the system as described in the overview above.

# 2.2 Using the Table of Contents as a guide...

The pertinent sections of the **table of contents** are arranged below in "*logical order*". This means that if you are installing the program at a new site then you will start with the steps outlined in item 1. Then item 2 steps are arranged in the order that they are usually taken immediately after a new installation has been completed. After the new users' "*change password*" action has been performed the steps 2a through 2g may be taken independently from each other (i.e. each step outlines how to perform a specific "*free standing*" action). Item 3 outlines all of the remaining actions that may be taken <u>only</u> by a Supervisor.

### 1. Installer Activities

- a) install the TPS program
- b) launch the TPS program
- c) add Supervisors and Users
- d) log out

### 2. Supervisor and User Activities

- a) log in
- b) create password
- c) change password
- d) read a tag
- e) program a tag
- f) template load
- g) log out

### 3. <u>"Supervisor only" Activities</u>

- a) add Supervisors and Users
- b) template create and save
- c) **TPS configuration** setup functions (e.g. automatic read or write the tags)
- d) other supervisor functions

### 3.0 Program installation procedure

#### You must be an "Installer" to perform this function.

Make a copy of the original program disk(s). Store the original disk(s). Use the copy to install the program onto your hard drive. The TPS program is entirely *self-installing* by using the "Setup.exe" utility on program disk #1. Be prepared to use the secret "installer's password" and the "authorization code" at the appropriate prompt in the install process.

- Verify that there are no other Windows® applications currently running on the computer (i.e. Word®, Excel®, etc.)
- Insert program disk #1 into the floppy drive.
- Use the Windows® toolbar commands "Start", "Run" then "Browse" to locate the Setup program (see example below).

| Browse             |                |         |   |          | ?                    | ×   |
|--------------------|----------------|---------|---|----------|----------------------|-----|
| Look jn: 🛃         | 3½ Floppy (A:) | <br>• E |   | <u>م</u> | 8-8-<br>0-0-<br>8-8- |     |
| isdel.exe          |                |         |   |          |                      | 1   |
|                    |                |         |   |          |                      | I   |
|                    |                |         |   |          |                      | I   |
|                    |                |         |   |          |                      |     |
| l                  |                |         |   |          |                      | 4   |
| File <u>n</u> ame: | Setup.exe      |         |   |          | <u>O</u> pen         |     |
| Files of type:     | Programs       |         | • |          | Cancel               |     |
|                    |                |         |   |          |                      | 111 |

Important Note: It is not necessary to have the TPU connected in order to install the software and configure the system users.

• Click "Open", the Run window is displayed again except now the Setup.exe utility is loaded.

| Run           | ? ×   |
|---------------|---|
|               | Type the name of a program, folder, document, or Internet resource, and Windows will open it for you. |
| <u>O</u> pen: | A:\Setup.exe  |
|               | OK Cancel <u>B</u> rowse  |

• After clicking "OK", the very first message box for the TPS install will look like this...



The InstallShield® Wizard is installed first and you are prompted to wait.

There are several screens associated with the InstallShield® Wizard displayed next.

• The Welcome screen displays usual warnings. Please read them then click on the "Next" button.

|  | Welcome to the T500 Tag Programmer Setup program. This<br>program will install T500 Tag Programmer on your computer.   |
|--|--|
|  | It is strongly recommended that you exit all Windows programs<br>before running this Setup program.  |
|  | Click Cancel to quit Setup and then close any programs you have<br>running. Click Next to continue with the Setup program.   |
|  | WARNING: This program is protected by copyright law and<br>international treaties.   |
|  | Unauthorized reproduction or distribution of this program, or any<br>portion of it, may result in severe civil and criminal penalties, and<br>will be prosecuted to the maximum extent possible under law. |
|  | < Back Next > Cancel   |

• After clicking on the "Next" button, the Software License Agreement screen is displayed.

| Software License Agreement   |
|--|
| Please read the following License Agreement. Press the PAGE DOWN key to see  |
| Mark IV Industries, Ltd., I.V.H.S. Division  |
| SOFTWARE LICENSE AGREEMENT   |
| This document states the terms and conditions upon which MARK IV<br>INDUSTRIES, LTD., I.V.H.S. DIVISION ("MARK IV"), offers to license to<br>the Licensee the software embedded and any other software supplied<br>under Mark IV Terms and Conditions of Sale ("the Software"). By issuing<br>a Purchase Order and making a purchase, Licensee is agreeing to<br>become bound by the terms of this agreement.<br>The software as supplied by MARK IV is licensed, not sold, to Licensee<br>for use only under the terms of this license and MARK IV reserves all<br>rights not expressly granted to Licensee and MARK IV retains ownership<br>of all copies of the Software. |
| Do you accept all the terms of the preceding License Agreement? If you choose No, Setup<br>will close. To install T500 Tag Programmer, you must accept this agreement.   |
| < <u>B</u> ack <u>Y</u> es <u>N</u> o  |

• Please read <u>all</u> of the agreement. To continue installing TPS, click on the "Yes" button.

| Readme Information   | ×  |
|--|--|
| Information:         MARK IV Industries Ltd. · IVHS DIVISION         T500 T ag Programmer - PC Software (700371-003)         March 24, 1999 · Release Notes         Description         Maintenance release of T500 tag programming statistics         This version has been qualified.         New Features         1. New option to clear unassigned agency and scrafor the scratchpad fields:         clear bits (Toll collection, traffic management field;         unassigned agency bits: not cleared. Default settistist:         2. The DLL file is checked for the proper version. The scratchpad field settististic clear bits.         2. The DLL file is checked for the proper version. The scratchpad field settististic clear bits. | Version <sup>•</sup><br><sup>Version<sup>•</sup></sup><br><sup>on PC sc</sup><br>tchpad f<br><sup>s). Defau<br/><sup>ng for un</sup><br/><sup>the progre</sup><br/><u>Cancel</u></sup> |

• Click on "Next", the User Information screen is displayed ...

| User Information | ×   |   |
|------------------|---|---|
|                  | Type your name below. You must also type the name of the<br>company you work for. |   |
|                  | Name: Bob Middlemiss<br>Company: MARKIV   | Type the requested information into the appropriate fields. |
| Ŵ                |   |   |
|                  | < <u>B</u> ack <u>N</u> ext > Cancel  |   |

Click on "Next", the Choose Destination Location screen is displayed ...



• Click on "Next", the Select Program Folder screen is displayed ...

| Select Program Folder | x   |  |
|-----------------------|---|--|
| Select Program Folder | Setup will add program icons to the Program Folder listed below.<br>You may type a new folder name, or select one from the existing<br>Folders list. Click Next to continue.<br>Program Folders:<br>Mark IV T500 Tag Programmer | At this point, the installer will select a<br>folder in which the program icon is to<br>be placed. Usually the default as<br>shown is OK so you may simply click<br>on "Next".         |
|                       | Existing Folders:<br>Accessories<br>Adobe Acrobat<br>ATI Multimedia<br>AutoCAD LT 97<br>Cheyenne AntiVirus for Windows 95<br>CoreIDRAW 8<br>FlashPath<br>Internet Explorer  | However<br>Example: If you want to create a new<br>folder name then type it. Alternatively,<br>you may select a name from the<br>"Existing Folders:" field list, then Click<br>"Next". |
|                       | < <u>B</u> ack <u>N</u> ext > Cancel  |  |

• Click on "Next", the Start Copying Files screen is displayed...

| Start Copying Files | ×   |
|---------------------|---|
| 573                 | Setup has enough information to start copying the program files.<br>If you want to review or change any settings, click Back. If you<br>are satisfied with the settings, click Next to begin copying files. |
| ad <b>en a</b> lard | Current Settings:   |
|                     | Setup Type:   |
|                     | Target Folder<br>C:\Program Files\Mark IV\T500 Tag Programmer   |
|                     | User Information<br>Name: Bob Middlemiss<br>Company: MARKIV   |
|                     |   |
|                     | < <u>B</u> ack <u>Next&gt;</u> Cancel   |

• After clicking the "Next" button, the install utility decompresses and copies the files on disk #1. Eventually the following prompt appears...

| Setup Needs | The Next Disk  | ×  |
|-------------|--|--|
| -           | Please insert the next disk, Disk 2. If the files<br>can be found in another location, for exampl<br>drive, enter its full path or click the Browse b<br>its path. | s on this disk<br>e, in another<br>utton to select |
| Path:       |  |  |
| A:V         |  | Browse   |
|             | OK   | Cancel   |

- Remove disk #1 from the floppy drive and put disk #2 into the floppy drive.
- Click on OK to continue, eventually the installed program icons appear briefly as...

| elp        |                                |             |          |           |                      |                   |                   |      |
|------------|--------------------------------|-------------|----------|-----------|----------------------|-------------------|-------------------|------|
| ]<br>)rive | ¥<br>Disconnect                | X<br>Cut    | Сору     | Paste     | ピ)<br>Undo           | )<br>Delete       | Properties        | Viet |
| /lark      | IV T500 Tag Pr                 | ogrammer    |          |           |                      |                   |                   |      |
|            | Mark J<br>Tag<br>Progra        | IV T50      | 00<br>er | Release I | Notes T500<br>Progra | Tag T5<br>amm Pro | 00 Tag<br>grammer |      |
|            | Select an iter<br>description. | m to view i | its      |           |                      |                   |                   |      |

• Then the Setup Complete prompt appears with an option to launch the program.

| Setup Complete Setup has finished co Setup will now launch | pying files to your computer.<br>the program. Select your option below.<br>program file | To launch the program click o<br>beside the prompt "Yes, Laun<br>program file", then click on the<br>button.<br>Otherwise, to finish the installa<br>launching the program, first re<br>from the floppy drive in use, ve<br>other floppy drives (if present)<br>and then click on the "Finish" | n the box<br>ch the<br>e "Finish"<br>ation without<br>emove disk #2<br>erify that all<br>are empty,<br>button. |
|--|---|--|--|
| Click Finish to comple                                     | ete Setup.<br>Back Finish   | In either case, the TPS<br>program icon will be visible<br>on the Windows desktop as<br>shown at right.  | T500 Tag<br>Programmer   |

The program installation from disk is complete at this point. The installer now launches the program and sets up the TPS system with at least one Supervisor before logging out from the installation.

# 3.1 Launching the TPS program

If the "Yes, Launch..." box shown above was selected then the computer will start the TPS program. If the "Yes, Launch..." box shown above was not selected then to start the TPS program do the following.

The TPS program icon will be displayed on the Windows desktop (because after the installation is complete the program is listed in the Startup menu).

To launch the TPS program click on the icon.

If the following error message appears...



Then you must...

 Verify that the TPU is turned on and is connected to the host computer. Look at the <u>virtual LED</u> indicator for "TPU status" located at the bottom right of the host computer screen.

| ¥                                 |
|-----------------------------------|
| TPU Status: Not Connected 🕒 📃 NUM |
| 🗾 🔁 7:59 AM                       |

T500 Tag

- 2) Verify all cable connections at the back of the TPU and AU and PC.
- 3) Verify that the PC serial port that you are connected to (COM1 or COM2) matches the default port set in the configuration menu (see *Set Communications port parameters*).

Note:

The cable marked "326595-001" connects the AU to the TPU.

The cable marked "326595-002" connects the TPU to the PC (Host).

Do not switch these two cables, even though they look identical they are not. The Host cable has a "null modem" built in and is intended only for the Host connection.

• Type in the "authorization code" for the specific TPU then press OK

| Authorization Code  | × |  |  |  |  |  |  |
|---|---|--|--|--|--|--|--|
| Enter the authorization code below.   |   |  |  |  |  |  |  |
| You will not have to re-enter it as long as the<br>application remains running. |   |  |  |  |  |  |  |
| Authorization Code:   |   |  |  |  |  |  |  |
| <u>O</u> K <u>C</u> ancel   |   |  |  |  |  |  |  |

| Poss     | Possible error messages are   |  |  |  |  |  |  |  |
|----------|---|--|--|--|--|--|--|--|
| Tag Prog | gramming Station  |  |  |  |  |  |  |  |
|          | AUTHENTICATION ERROR  |  |  |  |  |  |  |  |
|          | The authorization code entered on the PC is not valid for this particular tag programmer.<br>Please ask the superviser to exit the program and re-enter the authorization code. |  |  |  |  |  |  |  |
|          | OK  |  |  |  |  |  |  |  |
|          |   |  |  |  |  |  |  |  |

• The TPS main menu screen will appear in the background along with the "Log in to Tag Programming Station" dialog box.

| Login                             | × |
|-----------------------------------|---|
| Log in to Tag Programming Station |   |
| User ID:                          |   |
| Password:                         |   |
| <u>O</u> K <u>C</u> ancel         |   |

- Type "installer" in the User ID box, then select the Password box and type "doinstall" as the password then click the OK button. (*Note that both typed entries here are 'case sensitive'*.)
- This warning message is displayed. Click the OK button to continue.

|   | The Users Database does not exist. It will be now be o | created | L. |
|---|--|---------|----|
|   |  |         |    |
|   |  |         |    |
| A | You must add a supervisor to the user database.        | •       | ٦  |

This warning message is displayed. Click the OK button to continue.

At this point the installer is ready to set up the first group of Supervisors and/or Users. The installer <u>must</u> add at least one Supervisor before logging out from the installation. Refer to the section *Add Supervisors and Users* procedure in this manual.

ÖK

### 3.1.1 Notes regarding the location of various program files

After you run the program for the first time, the following files are created in the Windows® directory.



WARNING ! Do not erase or move, or change the properties or the names of these files.

Note:

After you install the program, the following files are loaded in the application directory. *If you have used the TPS installation defaults, the application directory will be as shown below.* 

| 💐 Exploring - T500 Tag Programmer  |                   |                                 |   |                                    |                       |                  |            |   |
|--|-------------------|---------------------------------|---|------------------------------------|-----------------------|------------------|------------|---|
| <u> </u>   | ools <u>H</u> elp |                                 |   |                                    |                       |                  |            |   |
| Image: style="text-align: center;">Image: style="text-align: center;"/>Image: style: style="text-align: center;"/>Image: style="text | Map Drive         | e Disconnect                    | X L<br>Cut Copy                                   | Paste                              | ビク )<br>Undo De       | elete Properties | Views      |   |
| 🛛 Address 🧰 C:\Program Files\Markiv\T50  | D Tag Progra      | mmer                            |   |                                    |                       |                  |            | • |
| All Folders  | ×                 | Name                            |   | Size                               | Туре                  | Modified         | Attributes |   |
| · · -  |                   | 🛋 _deisreg.isr                  |   | 1KB                                | ISR File              | 3/1/99 11:16 AM  | А          |   |
|  |                   | ∑_isreg32.dll                   |   | 46KB                               | Application Extension | 11/12/98 4:49 PM | А          |   |
|  |                   | 🔊 DelsL1.isu                    |   | ЗКВ                                | ISU File              | 3/1/99 11:16 AM  | А          |   |
|  |                   | Mfc42.dll                       |   | 973KB                              | Application Extension | 9/26/98 12:00 AM | А          |   |
|  | ų.                | 🗒 Readme                        |   | ЗКВ                                | Text Document         | 2/9/99 3:32 PM   | А          |   |
|  |                   | D TPS                           |   | 1KB                                | Help Contents File    | 1/20/99 7:39 AM  | А          |   |
|  |                   | E TPS                           |   | 668KB                              | Application           | 3/24/99 2:57 PM  | А          |   |
| 1  |                   | 🔊 Tps.gid                       |   | 11KB                               | GID File              | 3/12/99 2:01 PM  | HA         |   |
|  |                   | 🔗 Tips                          |   | 642KB                              | Help File             | 3/18/99 3:04 PM  | А          |   |
| Cansol Gum   |                   | VRCProxyDII.dll                 |   | 68KB                               | Application Extension | 3/12/99 3:54 PM  | А          |   |
| OGIIGON  |                   | <b>Do no</b><br>chang<br>the na | WARNIN<br>t erase or<br>le the prop<br>ames of th | G !<br>move<br>perties<br>ese file | , or<br>or<br>es.     |                  |            |   |

After you subsequently read or programmed tags then several of the files with the extension "**.TXT**" are created in the **application directory**. If you have used the TPS installation defaults, the application directory will be C:\Program Files\Markiv\T500 Tag Programmer\\*.\*

### WARNING !

**Do not** erase or move, or change the properties or the names of these files.

**IMPORTANT** !

Template files may be stored anywhere however, for the purpose of easier system maintenance, try to use the same directory path each time you save a new template.

After you create new templates for programming tags then several of the

files with the extension ".TPL" are

created. The directory of template files

you accepted the default directory path when you saved those templates.

is C:\TagTemplates\\*.\* provided that

### 3.2 Add Supervisors and Users

• Select the main menu item "Supervisor" then click on the "Users" menu item. The Users information box is displayed as shown below. The information box will not have any users in the list if this is the first time that the list is displayed during the *program installation procedure*.

| Users   |       |       |      |            |              |                |        |                 | ×                   |
|---------|-------|-------|------|------------|--------------|----------------|--------|-----------------|---------------------|
| User II | )     | Туре  | Read | Programmed | Commissioned | Decommissioned | Logins | Change Password | Add User            |
| BMiddl  | emiss | Super | 74   | 10         | 0            | 0              | 7      | 2               |                     |
| HSimp   | son   | User  | 0    | 0          | 0            | 0              | 1      | 1               | <u>D</u> elete User |
|         |       |       |      |            |              |                |        |                 |                     |
|         |       |       |      |            |              |                |        |                 |                     |
|         |       |       |      |            |              |                |        |                 |                     |
|         |       |       |      |            |              |                |        |                 |                     |
|         |       |       |      |            |              |                |        |                 |                     |
|         |       |       |      |            |              |                |        |                 |                     |
|         |       |       |      |            |              |                |        |                 |                     |
|         |       |       |      |            |              |                |        |                 |                     |
|         |       |       |      |            |              |                |        |                 |                     |
|         |       |       |      |            |              |                |        |                 |                     |
|         |       |       |      |            |              |                |        |                 |                     |
|         |       |       |      |            |              |                |        |                 |                     |
|         |       |       |      |            |              |                |        |                 |                     |
|         |       |       |      |            |              |                |        |                 |                     |
|         |       |       |      |            |              |                |        |                 |                     |
|         |       |       |      |            |              |                |        |                 | Class               |
|         |       | _     |      |            |              |                |        |                 |                     |

• Now click on the "Add User" button. The "Add User" dialog box is displayed.



• Now click on the down arrow } on the right hand side to view the "User Type" list.



- Select and click on the "Supervisor" type.
- Select the "User ID" box and type the Supervisor's name.



| War | nings that may be seen                       |
|-----|--|
| À   | The new user ID contains invalid characters. |
|     | OK   |

Invalid characters are typically "spaces".

Now click on the OK button. The new Supervisor's name is added to the current list.

| User ID      | Туре  | Read | Programmed | Commissioned | Decommissioned | Logins | Change Passw | Add User            |
|--------------|-------|------|------------|--------------|----------------|--------|--------------|---------------------|
| BMiddlemiss  | Super | 74   | 10         | 0            | 0              | 7      |              |                     |
| HomerSimpson | Super | 0    | 0          | 0            | 0              | 0      |              | <u>D</u> elete User |

- Repeat the process until all Supervisors are added to the list.
- During the installation procedure, the installer may also add any Users to the list at this time. Afterward, the installer will log out.
- All new users added to the list must log in and register their unique passwords by using the *Change Password* procedure.

# 3.3 Log out

• Select the main menu item "User" then click the mouse button on the sub-menu item "Logout".



• The following message is displayed.

| Login                             | × |
|-----------------------------------|---|
| Log in to Tag Programming Station |   |
| User ID:                          |   |
| Password:                         |   |
| <u>D</u> K <u>C</u> ancel         |   |

- Click the Yes button. You are now logged out and the log in dialog box is displayed immediately.
- Click OK to log in or click Cancel to set the TPS program to "idle" mode (= nobody is logged in).

At this point the banner at the top of the main menu shows nobody is logged in. In this "idle" mode the program is not terminated but is ready for the next person to log in. This "idle" mode will also be set after the automatic logout timer expires (if it was enabled).

### 4.0 Supervisor and User Functions

- 1. You must be logged in to the system <u>before</u> you may read or program a tag.
- 2. You must read a tag before you may obtain the template editor.
- 3. You must select an existing template or use the *template editor* to create a specific *template* (also known as the *tag configuration data file*).
- 4. You must always verify that the selected template is correct before you program a tag.

# 4.1 Log in

• Select the main menu item "User" then click the mouse button on the sub-menu item "Login".

| MARK IV        | Possible error messages (see |
|----------------|------------------------------|
| Iag Ulser Help | Appendix - displayed error   |
| Logout ?       | Tag Programming Station      |

- The "Log in to Tag Programming Station" dialog box appears.
- Type your log in ID. Now select the password box and type your password then press OK.

| Login X          | The <b>first time</b> you ever log in you may leave the password box empty. You will then be prompted to create a password. See also <i>Create password</i> for details. |  |  |  |
|------------------|--|--|--|--|
| Password: ****** | Tag Programming Station  |  |  |  |

• After you are logged in the top banner has your ID and the operable command buttons are in **bold**.

| MARK IV - BMiddlemiss                  |                          |   |   |  |  |  |  |
|--|--------------------------|---|---|--|--|--|--|
| <u>T</u> ag <u>U</u> ser <u>S</u> uper | Iag User Supervisor Help |   |   |  |  |  |  |
| Read                                   | Program                  | 6 | ę |  |  |  |  |

The **Program** command button will become operable when a tag is read, see also *Program a Tag* for details.

From this point you have access to all functions set for your access level. Refer to the access level table at the rear of the manual for details.

Generally,

- a Supervisor has access to all functions
- a User (Operator) has access to Read and Program Tags

### 4.2 Create password

Situation: The Supervisor has just added your name to the User list and this is the **first time** you have ever attempted to log in to the system. When the log in box is displayed, you may type your log in name in the User ID box and leave the Password box empty.

| Login                             | × |
|-----------------------------------|---|
| Log in to Tag Programming Station |   |
| User ID: JuliaRoberts             |   |
| Password:                         |   |
| <u>D</u> K <u>C</u> ancel         |   |

#### IMPORTANT...

The user ID and password are case sensitive. You must remember and use the exact typing as was originally entered and accepted by the system.

• Click on the OK button. You will then be prompted to create a password.



• Click on the OK button. The "Create Password" dialog box appears.

| Create Password  |                           | × |
|------------------|---------------------------|---|
| New Password:    |                           |   |
| Verify Password: |                           |   |
| <u>(</u>         | <u>D</u> K <u>C</u> ancel |   |

 Type the new password into the "New Password" field. Type the new password once more into the "Verify Password" field.

| Create Password  | X        |
|------------------|----------|
| New Password:    | ******   |
| Verify Password: | ******** |
| <u>0</u> k       | Cancel   |

Warnings that may

| Your new password must be 6 to 32 characters long. | Any upper or lower<br>case characters<br>including numbers are<br>allowed. |
|--|--|
| Your new password contains invalid characters.     | Invalid characters<br>are typically<br>"spaces".                           |

- Now click the OK button.
- The new password must be used the very next time that you log into the program.

Notes:

- You must have a password in order to perform any programming or reading of tags.
- To change your password refer to "Change Password".

### 4.3 Change password

- In order to change a password you must be logged in first.
- Select the main menu User item then click on "Change Password".



• The "Change Password" dialog box is displayed. Type the current and new passwords into the appropriate fields. Type the new password once more into the "Verify Password" field. Then click the OK button.



• The new password must be used the very next time that you log into the program.

Notes:

• You must have a password in order to perform any programming or reading of tags.

# 4.4 Reading and Programming IAG Tags

### 4.4.1 Read an IAG tag

- Place the IAG tag into the foam insert in the AU drawer that is configured to accept this type of tag. (see tag orientation photo in *Appendix Positions of tags in the AU drawer "cradle"*.).
- Close the AU drawer. Click on "Read" button, otherwise if the Read command has been set to automatic, then the following screen is displayed (example: a Type 2 interior FPT tag was used).

| Read                        | Program          | 8                                  | ?                  |               |          |
|-----------------------------|------------------|------------------------------------|--------------------|---------------|----------|
| uto write (                 | enabled          |                                    |                    |               |          |
| actory/Agency A             | gency (Custom)   | Scratch Pad Sc                     | ratch Pad (Custom) |               |          |
| Factory                     |                  |                                    |                    |               |          |
| Тад Туре:                   | Type 2 Interior  | FPT (0)                            |                    |               |          |
| Application ID:             | Toll Collection  | (1)                                |                    |               |          |
| Group ID:                   | IAG (65)         |                                    | 17 14.0            | 1. (D)        |          |
| Agency ID:<br>Carial Number | Metropolitan I   | riborough Area Bridg<br>544 Januar | ge and Tunnel Auth | onty (8)      |          |
| senal Number.               | 1300106(104      | E4A nexj                           |                    |               |          |
| Agency —                    |                  |                                    |                    | Template Data |          |
| Vehicle Reference           | 200              |                                    |                    | 200           |          |
| Vehicle Type:               | Pickup Truck     | (3)                                |                    | Not Changed   | •        |
| Vehicle Axles:              | 2 Axles (2)      |                                    |                    | Not Changed   | •        |
| Vehicle Weight:             | <= 7000 lbs. (0  | Ŋ                                  |                    | Not Changed   | •        |
| Vehicle Rear Tires:         | Single Rear Ti   | res (0)                            |                    | Not Changed   | •        |
| Revenue Type:               | Private Vehicle  | e (O)                              |                    | Not Changed   | -        |
| Commission:                 | Commissioned     | 0                                  |                    | Not Changed   | -        |
| Mounting Logation           | L (indebield (0) | (-)                                |                    |               |          |
| Mounting Location.          | windshield (0)   |                                    |                    | INot Changed  | <u> </u> |

The **Program** command button is highlighted in **bold** after the tag is read.

"Auto write enabled" is displayed if it has been enabled. This is a warning for the User that opening and closing the AU drawer will overwrite the tag inside the drawer with the data currently displayed.

If the "Default View Page" was set to "Factory/Agency" then the tag data is displayed as shown. The Supervisor may begin modifying the displayed *template* or may create a new one from it and then save it.

Users will then be able to obtain any one of the saved templates for use in programming other tags.

Click on "Deteile" to view the error

Notes: The absence of a Template File name (at bottom left) indicates that the data displayed came from the tag just read. "Not Changed" in the selection boxes is displayed until the Supervisor makes a new selection in order to create a new template from this one. The *Vehicle Reference* field value (shown as "200" in the example above) represents the cumulative total of the first 4 field values assigned as "vehicle" data.

• If the automatic Read is not set, click on the Read button. Within 1 second the tag contents are displayed (See "Data displayed on 'Read a tag'" below).

### Message "Read Failed"

The following message appears if the read command failed.

| Template File:  | code for the failure. A typical error<br>code message is depicted below.<br>The code shown must be<br>revealed to Mark IV Service Dept. |
|---|---|
|   | Tag Programming Station   |
| The reason for the failure detected is shown here.<br>Another typical reason displayed is " <b>Drawer is oper</b> | Drawer is open (code = 0x1013)  |

#### Data displayed on "Read a tag"

There are also 4 folder tabs displayed. The folder tabs represent the various areas inside the tag that are programmable either by the Factory or by the Agency. If a Supervisor can modify a tag field it is displayed as a selection box (white background areas in the screen).

| MARK IV - BobMiddle                         | miss  |                                 | Г                             |   |  |
|---|---|---------------------------------|-------------------------------|---|--|
| <u>T</u> ag <u>U</u> ser <u>S</u> upervisor | <u>H</u> elp                                |                                 | The Supervisor may change the |   |  |
| Read  | Program 🛛 🚑 🛛 🢡                             |                                 | 1                             | default folder tab displayed upon                                 |  |
| Factory/Agency Age                          | ency (Custom) Scratch Pad Scratch Pad (Cust | om)                             |                               | in the manual titled "Default View<br>Page."                      |  |
| lag lype:                                   | Type 2 Interior FPT (U)                     |                                 | -                             |   |  |
| Application ID:                             | Lollection (1)                              |                                 | Г                             | <b>T</b> I I (1 I I I I   |  |
| Agency ID:                                  | New York State Thruway Authority (4)        |                                 |                               | The selection boxes shown here                                    |  |
| Serial Number:                              | 776476 (BD91C hex)                          |                                 |                               | allow the template data to be                                     |  |
|   |   |                                 |                               | modified  |  |
| Vehicle Reference:                          | 72  | 72                              |                               | inounou.  |  |
| Vehicle Type:                               | Automobile or Sport Utility (1)             | Automobile or Sport Utility (1) |                               |   |  |
| Vehicle Axles:                              | 2 Axles (2)                                 | 2 Axles (2)                     |                               |   |  |
| Vehicle Weight:                             | <= 7000 lbs. (0)                            | <= 7000 lbs. (0)                |                               |   |  |
| Vehicle Rear Tires:                         | Single Rear Tires (0)                       | Single Rear Tires (0)           |                               |   |  |
| Revenue Type:                               | Private Vehicle (0)                         | Private Vehicle (0)             |                               |   |  |
| Commission:                                 | Commissioned (0)                            | Commissioned (0)                | _                             |   |  |
| Mounting Location:                          | Windshield (0)                              | Windshield (0)                  |                               | The number of blue squares  |  |
|   |   |                                 |                               | displayed in the "progress bar"                                   |  |
| Template File:                              |   |                                 |                               | indicates the relative completion<br>of the Read or Program task. |  |

The fixed Factory data fields and the variable Agency data fields from the **Factory/Agency** folder tab are displayed by default.

To display the value read in the interactive Agency (Custom) 31 bit data field, click on the **Agency (Custom)** folder tab.

| MARK IV - BobM                                   | iddlemiss           |                |                    |   |  |  |
|--|---------------------|----------------|--------------------|---|--|--|
| <u>T</u> ag <u>U</u> ser <u>S</u> uper           | rvisor <u>H</u> elp |                |                    |   |  |  |
| Read   | Program             | 6              | ?                  |   |  |  |
| Auto write                                       | e enabled           | ) I -          |                    | , |  |  |
| Factory/Agency                                   | Agency (Lustom)     | Scratch Pad Sc | ratch Pad (Custom) |   |  |  |
| Agency Data: 00000000000000000000000000000000000 |                     |                |                    |   |  |  |
|  |                     |                |                    |   |  |  |
|  |                     |                |                    |   |  |  |

There would be selection boxes shown here only if a Supervisor created and saved a new template. Refer to the section "Create a new Template file".

"Clear Unassigned Bits", when selected, will set all the unused bits in the entire field to zero. Note 1. If a template file is not loaded then the "Clear Unassigned Bits" default value is "unselected". Reason: all IAG tags have these 31 bits set when they were originally programmed at the factory.

Note 2. If a template file is loaded then this "Clear Unassigned Bits" value is set to the data that was stored in that template file.

To display the value read in the scratch pad data fields, click on the Scratch Pad folder tab

| MARK IV - BobMidd  | llemiss  |                  |   |
|--|--|------------------|---|
| <u>T</u> ag <u>U</u> ser <u>S</u> upervis  | or <u>H</u> elp  |                  |   |
| Read   | Program 🚑 🢡  |                  |   |
| Auto write (<br>Factory/Agency A<br>Traffic Manageme<br>Reader ID:<br>Date:<br>Time:   | enabled<br>gency (Custom) Scratch Pad (Custom)<br>ent Data<br>0<br>Undefined (0)<br>00:00:00 (0) | Template Setting | "Clear <specified><br/>Data", when selected,<br/>will set all the bits in the<br/><specified> set of fields<br/>to zero.</specified></specified>  |
| Toll Collection Dat<br>Agency ID:<br>Plaza ID:<br>Lane ID:<br>Date:<br>Time:<br>Vehicle Class:<br>Future (Reserved)<br>Txn Number: | ta<br>MARK IV (0)<br>0<br>Undefined (0)<br>00:00:00 (0)<br>0<br>: 0<br>0<br>: 0<br>0 (0 hex)     | Template Setting | Similar to "Clear Unassigned Bits",<br>explanation below, except<br>If a template file is not loaded then<br>the "Clear Traffic Management<br>Data" or "Clear Toll Collection<br>Data" default value is "selected". |
| Check Sum<br>Checksum:<br>Template File:   | 54639 (D56F hex)   |                  | Be aware of these values if the<br>AUTO WRITE function is enabled<br>and there is no template file<br>loaded.   |

To display the value read in the interactive scratch pad 30 bit data field, click on the **Scratch Pad (Custom)** folder tab.

| MARK IV - BobMiddlemiss<br>Tag User Supervisor Help<br>Read Program As No.   |                            | There would be more selection   |
|--|----------------------------|---|
| Auto write enabled           Factory/Agency         Agency (Custom)         Scratch Pad         Scratch Pad (Custom)           Agency Data:         000000000000000000000000000000000000 | I Clear Unassigned Bits    | Supervisor created and saved an<br>IAG template.<br>Refer to the section "Create a new<br>IAG Template file". |
|  |                            |   |
| "Clear Unassigned Bits", when  | selected, will set all the | e unused bits in the entire field to zero.  |

| "Clea   | r Unassigned Bits", when selected, will set all the unused bits in the entire field to zero       | о. |
|---------|---|----|
| Note 1. | If a template file is not loaded then the "Clear Unassigned Bits" default value is<br>"selected". |    |
|         |   |    |

Note 2. If a template file is loaded then this "Clear Unassigned Bits" value is set to the data that was stored in that template file.

### 4.4.2 Load an IAG template (for programming an IAG tag)

(You should read and be familiar with the previous section in the manual.) All users must verify the current *template* displayed when programming a tag or a batch of tags. (The *template* is also known as the *tag configuration data file*.) If the current *template* data is incorrect then the user must load the correct *template*. If the correct template does not exist in the list of template files (see below) then the Supervisor must create it.

• Select the main menu item "User" then Click on the "Load Template" sub-menu item.

| MARI | K IV - BobMiddlemiss                     |
|------|--|
| Iag  | User Supervisor Help                     |
|      | Login<br>Logout                          |
| Fa   | Load Template II<br>Unioad Template III) |
| Г    | Change Password                          |

• The following dialog box appears (example).

| Open                     |                        | ? ×          |
|--------------------------|------------------------|--------------|
| Look in: 🔄               | TagTemplates 💌 🖻 💆     | <b></b>      |
| ) IAGtag<br>) Lod, \$200 | 0                      |              |
| File <u>n</u> ame:       | J                      | <u>O</u> pen |
| Files of <u>type</u> :   | Template Files (*.tpl) | Cancel       |

Template files are created and stored in a separate directory as specified by a Supervisor (default is c:\TagTemplates\\*.\*). If the required template does not exist then only a Supervisor may create a new *template*.

Possible error message may be "Unable to load template file" if the directory was emptied or if the files have been moved.

• Choose the appropriate *template* file by selecting it with the mouse then clicking on the "Open" button.

| lag Prog | ramming Station       | ×         |
|----------|-----------------------|-----------|
|          | Unable to load templa | ite file. |
|          | OK                    |           |

 Verify that this is the correct template; select the Factory/Agency folder tab and then examine all of the selection boxes displayed.

| 1000                | Program         | 6                   | ?                 |                                 |   |
|---------------------|-----------------|---------------------|-------------------|---------------------------------|---|
|                     |                 |                     |                   |                                 |   |
| actory/Agency Age   | ency (Custom)   | Scratch Pad Scr     | atch Pad (Custom) |                                 |   |
| Factory             |                 |                     |                   |                                 |   |
| Тад Туре:           | Type 2 Interior | FPT (0)             |                   |                                 |   |
| Application ID:     | Toll Collection | (1)                 |                   |                                 |   |
| Group ID:           | IAG (65)        |                     |                   |                                 |   |
| Agency ID:          | New York Sta    | te Thruway Authorit | y (4)             |                                 |   |
| Serial Number:      | 776476 (BD91    | L nexj              |                   |                                 |   |
| Agency              |                 |                     |                   |                                 |   |
| Vehicle Reference:  | 72              |                     |                   | 72                              |   |
| Vehicle Type:       | Automobile or   | Sport Utility (1)   |                   | Automobile or Sport Utility (1) | • |
| Vehicle Axles:      | 2 Axles (2)     |                     |                   | 2 Axles (2)                     | - |
| Vehicle Weight:     | <= 7000 lbs. (0 | ))                  |                   | <= 7000 lbs. (0)                | - |
| Vehicle Rear Tires: | Single Rear Ti  | res (0)             |                   | Single Bear Tires (0)           | - |
| Revenue Type:       | Private Vehicle | e (O)               |                   | Private Vehicle (0)             | - |
| Commission:         | Commissioned    | (0)                 |                   | Commissioned (0)                |   |
| Mounting Location:  | Windshield (0)  |                     |                   | Windshield (0)                  | - |
|                     |                 |                     |                   | ,                               | _ |

After verifying that the fixed Agency fields are correct you must then verify that the field having 31 bits of custom Agency Data is set to the desired value. Click on Agency Custom folder tab to view the current value set for this field (see below).

The selection boxes shown here allow the template data to be modified by a Supervisor. The presence of a Template File name (at bottom left) indicates that the data displayed came from that template file.

continued...

continued...

- After verifying that the fixed Agency fields are correct you must then verify that the 31 bits of custom Agency Data are set to the desired value.
- Click on the Agency Custom folder tab to view the current value set for this field.



The default value is 31 zeros (as shown). This portion of the Template file is created and stored in a separate directory as specified by a Supervisor. If the required agency custom data file does not exist then only a Supervisor may design a new *agency custom data* file.

- After verifying that the 31 bits of fixed custom Agency Data are correct you must then verify that the 30 bits of custom Scratch Pad Data are set to the desired value.
- Click on the Scratch Pad Custom folder tab to view the current value set for this field.



• Click on the Scratch Pad folder tab to view the current value set for "Clear Unassigned Bits".

| MARK IV - BobMiddlemiss   |                                 |  |
|---|---------------------------------|--|
| <u>I</u> ag <u>U</u> ser <u>S</u> upervisor <u>H</u> elp        |                                 |  |
| Read Program 🚔 🦓  |                                 | Clear Traffic Management Data", when selected            |
| Auto write enabled  |                                 | will get all the unused bits in the optime field to zero |
| Factory/Agency Agency (Custom) Scratch Pad Scratch Pad (Custom) |                                 | will set all the unused bits in the entire held to zero. |
| Traffic Management Data<br>Reader ID: 0                         | Template Setting                | If no template is loaded the default is "selected".      |
| Date: Undefined (0)   | I Clear Traffic management Data |  |
| 1 ime: 00:00:00 (0)   |                                 |  |
| Toll Collection Data  | Template Setting                | "Clear Toll Collection Data" when selected will set      |
| Agency ID: MARK IV (0)  |                                 |  |
| Plaza ID: 0   |                                 | all the unused bits in the entire field to zero.         |
| Lane ID: 0  |                                 | If no template is loaded the default is "selected"       |
| Date: Undefined (0)<br>Time: 00:00:00 (0)                       | Clear Toll Collection Data      |  |

At this point the data to be programmed has been visually verified. The tag may now be programmed. Refer to the section *Program an IAG Tag*.

#### 4.4.3 Program an IAG tag

- Load and verify the required "template" file for programming the tag. Refer to the section titled Load a Template.
- Place the tag to be programmed into the foam insert in AU drawer<sup>2</sup>. Close the AU drawer.
- If the Supervisor (see Supervisor Configuration of Automation parameters) has set the **Automatic Write** function, the tag will be programmed. Within 1 second the "Write Successful" message is displayed (as shown further below).
- If the Automatic Write function has not been set, click on the Program button.

| ARK IV - BMiddlemiss             |   |   |  |  |  |  |
|----------------------------------|---|---|--|--|--|--|
| <u>Iag User Supervisor H</u> elp |   |   |  |  |  |  |
| Read Program                     | 4 | ę |  |  |  |  |

• Within 1 second the "Write Successful" message is displayed.

| MA | RK IV - BobMiddle   | emiss  |  |                       |   |
|----|---|--|--|-----------------------|---|
| Ιa | g <u>U</u> ser <u>S</u> uperviso  | r <u>H</u> elp   |  |                       |   |
|    | Read  | Program  | 6  | ę                     |   |
| 0  | Factory/Agency Ag<br>Factory<br>Tag Type:<br>Application ID:  | jency (Custom)<br>Type 2 Interio<br>Toll Collection  | Scratch Pad Sc<br>r FPT (0)<br>(1)           | ratch Pad (Custom)    |   |
|    | Group ID:<br>Agency ID:<br>Serial Number:   | IAG (65)<br>New York Sta<br>776476 (BD91   | te Thruway Authori<br>IC hex)                | ty (4)                |   |
|    | Vehicle Reference:<br>Vehicle Type:<br>Vehicle Axles:<br>Vehicle Weight:<br>Vehicle Rear Tires:<br>Revenue Type:<br>Commission: | 72<br>Automobile or<br>2 Axles (2)<br><= 7000 lbs. (I<br>Single Rear T<br>Private Vehicl<br>Commissioned | Sport Utility (1)<br>D)<br>ires (0)<br>e (0) |                       | 72       Automobile or Sport Utility (1)       2 Axles (2)       <= 7000 lbs. (0)       Single Rear Tires (0)       Private Vehicle (0) |
|    | Mounting Location:  | Windshield (0)   | )  |                       | Vindshield (0)  |
| Τe | emplate File: D:\Wo   | rking\Test TPS   | Affeettaxis.tpl Tag T                        | ype 2 Interior FPT (C | cessful   |

#### Message "Write Failed"

The following message appears whenever the tag cannot be programmed.



<sup>&</sup>lt;sup>2</sup> There are two drawer configurations, see Appendix - Positions of tags in the AU drawer "cradle". The cutout in the foam "cradle" allows for several different tag configurations to be used. The tag orientation is shown in a specific photo appendix to this document, example: *IAG FPT tag orientation in the AU drawer*. More photos of the AU drawer depicting various tag orientations along with different foam inserts will be added as the TPS system is expanded to handle other tags.

# 4.5 Reading and Programming Type 2 LCD Tags

### 4.5.1 Read a Type 2 LCD tag

- Place the Type 2 LCD tag into the foam insert in the AU drawer made that was for this type of tag (see tag orientation photo in *Appendix Positions of tags in the AU drawer "cradle"*.).
- Close the AU drawer. Click on "Read" button, otherwise if the Read command has been set to automatic, then the following screen is displayed (example: a Type 2 LCD Display tag was used).

| Read               | Program           | 4              | 8                 |                 |   |
|--------------------|-------------------|----------------|-------------------|-----------------|---|
| uto write          | enabled           |                |                   |                 |   |
| actory/Agency      | (Custom)          | Scratch Pad LC | D 🔰 Scratch Pad ( | Custom)         |   |
| Factory            |                   |                |                   |                 |   |
| Tag Type:          | Type 2 LCD Di     | splay (3)      |                   |                 |   |
| Application ID:    | Toll Collection   | [1]            |                   |                 |   |
| Group ID:          | IAG (65)          |                |                   |                 |   |
| Agency ID:         | ISTHA (15)        |                |                   |                 |   |
| Serial Number:     | 30589 (777D k     | ex)            |                   |                 |   |
| Agency             |                   |                |                   | E Template Data |   |
| Vehicle Reference  | : 72              |                |                   | 72              |   |
| Vehicle Type:      | Automobile (1)    |                |                   | Not Changed     | • |
| Vehicle Axles:     | 2 Axles (2)       |                |                   | Not Changed     | • |
| Vehicle Weight:    | <= 7000 lbs. (0   | )              |                   | Not Changed     | • |
| Vehicle Rear Tires | : Single Rear Tir | es (0)         |                   | Not Changed     |   |
| Revenue Type:      | Private Vehicle   | (0)            |                   | Not Changed     | - |
| Commission:        | Commissioned      | (0)            |                   | Not Changed     |   |
| Mounting Location  | : Windshield (0)  |                |                   | Not Changed     | • |
|                    |                   |                |                   | 1.              |   |

The **Program** command button is highlighted in **bold** after the tag is read.

"Auto write enabled" is displayed if it has been enabled. This is a warning for the User that opening and closing the AU drawer will overwrite the tag inside the drawer with the data currently displayed. If the "Default View Page" was set to "Factory/Agency" then the tag data is displayed as shown. The Supervisor may begin modifying the displayed *template* or may create a new one from it and then save it. Users will then be able to obtain any one of the saved templates for use in programming other tags.

Notes: The absence of a Template File name (at bottom left) indicates that the data displayed came from the tag just read. "Not Changed" in the selection boxes is displayed until the Supervisor makes a new selection in order to create a new template from this one. The *Vehicle Reference* field value (shown as "72" in the example above) represents the cumulative total of the first 4 field values assigned as "vehicle" data.

• If the automatic Read is not set, click on the Read button. Within 1 second the tag contents are displayed (See "Data displayed on 'Read a tag'" below).

### Message "Read Failed"

The following message appears if the read command failed.

| Template F | ile:<br>R<br>Could not   | ead Failed | r |  |  |  |
|------------|--|------------|---|--|--|--|
|            | The reason for the failure detected is shown here.<br>Another typical reason displayed is " <b>Drawer is open</b> ". |            |   |  |  |  |

Click on "Details" to view the error code for the failure. A typical error code message is depicted below. The code shown must be revealed to Mark IV Service Dept.



#### Data displayed on "Read a tag"

There are also 5 folder tabs displayed. The folder tabs represent the various areas inside the tag that are programmable either by the Factory or by the Agency. If a Supervisor can modify a tag field it is displayed as a selection box (white background areas in the screen).

The fixed Factory data fields and the variable Agency data fields from the **Factory/Agency** folder tab are displayed by default.

| MARK IV - BobMiddlemiss   |                                |  |  |  |
|---|--------------------------------|--|--|--|
| <u>Tag</u> <u>U</u> ser <u>S</u> upervisor <u>H</u> elp         | I ne Supervisor may change the |  |  |  |
| Read Program 🎒 🦻  |                                | default folder tab displayed upon      |  |  |
|   |                                | reading a tag. Refer to the section in |  |  |
| Factoru/Agencui Agencu (Custora) Seratob Rad LLCD Seratob Rad ( | Custom                         | the manual titled "Default View Page"  |  |  |
|   |                                |  |  |  |
| Factory - Ture 21 CD Direlay (2)                                |                                |  |  |  |
| Application ID: Toll Collection (1)                             |                                |  |  |  |
| Group ID: IAG (65)  |                                | The selection boxes shown here allow   |  |  |
| Agency ID: ISTHA (15)   |                                | the template data to be modified       |  |  |
| Serial Number: 21640 (5488 hex)                                 |                                | the template data to be modified.      |  |  |
| Agency  |                                |  |  |  |
| Vehicle Reference: 328  | 328                            |  |  |  |
| Vehicle Type: Minibus - Seats 10-15 (5)                         | Minibus - Seats 10-15 (5)      |  |  |  |
| Vehicle Axles: 2 Axles (2)                                      | 2 Axles (2)                    |  |  |  |
| Vehicle Weight: <= 7000 lbs. (0)                                | <= 7000 lbs. (0)               |  |  |  |
| Vehicle Rear Tires: Single Rear Tires (0)                       | Single Rear Tires (0)          |  |  |  |
| Revenue Type: Private Vehicle (0)                               | Private Vehicle (0)            |  |  |  |
| Commission: Commissioned (0)                                    | Commissioned (0)               |  |  |  |
| Mounting Location: Windshield (0)                               | Windshield (0)                 | I he number of blue squares displayed  |  |  |
|   |                                | ✓ in the "progress bar" indicates the  |  |  |
| Template File:  |                                | relative completion of the Read or     |  |  |
|   |                                | Program task                           |  |  |
|   |                                | r rogram task.                         |  |  |

To display the value read in the interactive Agency (Custom) 7 bit data field<sup>3</sup>, click on the **Agency (Custom)** folder tab.

| MARK IV - BobMiddlemiss       Jag User Supervisor Help       Read     Program  | There would be more selection boxes shown here only if a   |  |  |  |  |  |  |
|--|--|--|--|--|--|--|--|
| Auto write enabled         Factory/Agency       Agency (Custom)         Scratch Pad       LCD         Scratch Pad       Clear         Agency Data:       0000000 | Unassigned Bits Supervisor created and saved a new template.<br>Refer to the section "Create a new Template file". |  |  |  |  |  |  |
| "Clear Unassigned Bits", when selected, will set all the unused bits in the entire field to zero.  |  |  |  |  |  |  |  |

Note 1. If a template file is not loaded then the "Clear Unassigned Bits" default value is "unselected". Reason: all ISTHA class tags have these 4 bits set when they were originally programmed at the factory.

Note 2. If a template file is loaded then this "Clear Unassigned Bits" value is set to the data that was stored in that template file.

<sup>&</sup>lt;sup>3</sup> The 7 bits are a combination of the contiguous 3-bit data field for "Agency Data" and the 4-bit data field for "Type 2 LCD Class". *The parsed data is*; MSB Agency data 1 →321 bits followed by MSB Type 2 LCD Class →4321 bits, current values allowed for "Type 2 LCD Class" are 1 through 9 and are assigned by the authority only of ISTHA.

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To display the value read in the scratch pad data fields, click on the Scratch Pad folder tab.

| ARK IV - BobMiddlemiss   | Similar to "Cloar Upassigned Bite"                                  |
|--|---|
| <u>I</u> ag <u>U</u> ser <u>S</u> upervisor <u>H</u> elp   | Similar to Clear Offassigned Bits,                                  |
| Read Program 🚑 🢡   | explanation below, except   |
| Auto write enabled<br>Factory/Agency [Agency (Custom)] Scratch Pad [LCD   Scratch Pad (Custom)]  | the "Clear Traffic Management Data"<br>default value is "selected". |
| Reader ID: 0   |   |
| Date: Undefined (0) Time: 00:00:00 (0)   | 1. Clears all toll collection data to zero                          |
| Toll Collection Data Agency ID: MARK IV (0) Diagonal Diag | Data" default value "selected" is set                               |
| Prizz a ID: 127<br>Lane ID: 0<br>Date: Mar 19 (3/19)   | and in the LCD tab the "Balance" is set to "not changed" (as shown  |
| Time: 08:00:02   | below).   |
| Vehicle Class: 0 Future (Reserved): 0  | 2. Clears all toll collection data to zero                          |
| Txn Number: 0 (0 hex)  | except Plaza ID (= 177), TC date (=                                 |
| Check Sum  | PC date) and TC time (= PC time) if                                 |
| Checksum: 14685 (395D hex)   | in the LCD tab the "Balance" is set to "clear" or "specific".       |
|  |   |

To display the value read in the LCD data fields, click on the **LCD** folder tab.

| MARK IV - BobMiddler  | niss  |                |   |  |   |   |
|---|---|----------------|---|--|---|---|
| <u>T</u> ag <u>U</u> ser <u>S</u> upervisor   | <u>H</u> elp  |                |   |  |   |   |
| Read P  | rogram  | 4              | ?   |  |   |   |
| Auto write er   | nabled  |                |   | 1  | 1   |   |
| Factory/Agency   Ager<br>Toll Information<br>Toll Amount:<br>Balance:<br>Low Balance:<br>Balance Adjust ID:<br>Balance Adjust Date: | s0.00<br>\$2000.00<br>Low Balan<br>Replaceme<br>Jul 26 (7/2 | Scratch Pad LU | D Scratch Pad I<br>Not C<br>Not C<br>Not C<br>Not C | hanged 💌<br>hanged 💌<br>hanged 💌<br>hanged 💌 | \$<br>The selection boxes shown<br>here display selected values<br>only if a Supervisor created<br>and saved a new template.<br>Refer to the section "Create a<br>new Template file". | 1 |

To display the value read in the interactive scratch pad 4-bit data field<sup>4</sup>, click on the **Scratch Pad (Custom)** folder tab.

| MARK IV - BobMiddlemiss   |                         | There would be cale ation haves    |
|---|-------------------------|------------------------------------|
| <u>I</u> ag <u>U</u> ser <u>S</u> upervisor <u>H</u> elp            |                         | There would be selection boxes     |
| Read Program 🚔 🦻  |                         | shown here only if a Supervisor    |
| Auto write enabled  |                         | Refer to the section "Create a new |
| Factory/Agency Agency (Custom) Scratch Pad LCD Scratch Pad (Lustom) |                         | Templete file"                     |
| Agency Data: 0000   | Clear Unassigned Bits   |                                    |
|   |                         |                                    |
|   |                         |                                    |
| "Clear Upgegigned Bite" when colocted                               | will got all the upuged | hite in the entire field to zero   |

"Clear Unassigned Bits", when selected, will set all the unused bits in the entire field to zero. Note 1. If a template file is not loaded then the "Clear Unassigned Bits" default value is "selected".

Note 2. If a template file is loaded then this "Clear Unassigned Bits" value is set to the data that was stored in that template file.

<sup>&</sup>lt;sup>4</sup> These 4 bits comprise the data field for "Agency data 2" in the R/W partitioned area of the tag.

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### 4.5.2 Load a Type 2 LCD template (for programming a Type 2 LCD tag)

(You should read and be familiar with the previous section in the manual.) All users must verify the current *template* displayed when programming a tag or a batch of tags. (The *template* is also known as the *tag configuration data file*.) If the current *template* data is incorrect then the user must load the correct *template*.

• Select the main menu item "User" then Click on the "Load Template" sub-menu item.



• The following dialog box appears (example).

| Open               |                        |   |         |          | <u>? ×</u>           |
|--------------------|------------------------|---|---------|----------|----------------------|
| Look jn: 🦳         | TagTemplates           | - | <u></u> | <b>ä</b> | 8-8-<br>9-9-<br>8-8- |
| Abulance           |                        |   |         |          |                      |
| BlueCross          |                        |   |         |          |                      |
| AG(30)             | D                      |   |         |          |                      |
|                    | -                      |   |         |          |                      |
|                    |                        |   |         |          |                      |
|                    |                        |   |         |          |                      |
| File <u>n</u> ame: | [AGtag                 |   | -       |          | <u>O</u> pen         |
|                    |                        |   | _       | -        |                      |
| Files of type:     | Template Files (*.tpl) |   | •       |          | Cancel               |

Template files are created and stored in a separate directory as specified by a Supervisor (example directory at left is "TagTemplates"). If the required template does not exist then only a Supervisor may create a new *template*. Possible error message may be "Unable to load template file" if the directory was emptied or if the files have been moved.



- Choose the appropriate *template* file by selecting it with the mouse then clicking on the "Open" button.
- Verify that this is the correct template; select each folder tab in turn and then examine all of the selection boxes displayed.

| MARK IV - BobMid                        | ldlemiss           |                      |                     |                       |          |
|---|--------------------|----------------------|---------------------|-----------------------|----------|
| <u>T</u> ag <u>U</u> ser <u>S</u> uperv | isor <u>H</u> elp  |                      |                     |                       |          |
| Read                                    | Program            | 4                    | ę                   |                       |          |
| Auto write                              | enabled            |                      |                     |                       |          |
| Factory/Agency                          | Agency (Custom)    | Scratch Pad LC       | D 🔰 Scratch Pad     | (Custom)              |          |
| - Factory                               |                    |                      |                     |                       |          |
| Tag Type:                               | Type 2 LCD Di      | isplay (3)           |                     |                       |          |
| Application ID:                         | Toll Collection    | (1)                  |                     |                       |          |
| Group ID:                               | IAG (65)           |                      |                     |                       |          |
| Agency ID:                              | ISTHA (15)         |                      |                     |                       |          |
| Serial Number:                          | 30589 (777D k      | iex)                 |                     |                       |          |
| - Agency                                |                    |                      |                     | Template Data         |          |
| Vehicle Referenc                        | e: 72              |                      |                     | 72                    |          |
| Vehicle Type:                           | Automobile (1)     |                      |                     | Automobile (1)        | •        |
| Vehicle Axles:                          | 2 Axles (2)        |                      |                     | 2 Axles (2)           | <b>_</b> |
| Vehicle Weight:                         | <= 7000 lbs. (0    | Ŋ                    |                     | <= 7000 lbs. (0)      | -        |
| Vehicle Rear Tire                       | s: Single Rear Ti  | res (0)              |                     | Single Rear Tires (0) | -        |
| Revenue Type:                           | Private Vehicle    | e (0)                |                     | Private Vehicle (0)   | -        |
| Commission:                             | Commissioned       | (0)                  |                     | Commissioned (0)      | -        |
| Mounting Locatio                        | n: Windshield (0)  |                      |                     | Windshield (0)        | •        |
|   |                    |                      |                     | 11                    |          |
| Template File: C:\T                     | adTemplates\1 cd   | \$2000 tol Tag Tur   | e 21 CD Displau (3  | 1                     |          |
| rempiate fille. C. (1                   | agr cinpidies (Eca | , webborkpin ag i yp | io z coo pispidy (c | ,                     |          |

After verifying that the variable Agency fields are correct you must then verify that the field having 7 bits of custom Agency Data is set to the desired value. Click on Agency Custom folder tab to view the current value set for this field (see below).

Note: The Vehicle Reference field value (shown as "72" in the example above) represents the cumulative total of the first 4 field values assigned as "vehicle" data. continued...

continued...

- After verifying that the seven fixed Agency fields are correct you must then verify that the 7 bits of custom Agency Data are set to the desired value.
- Click on the Agency (Custom) folder tab to view the current value set for this field.



The default value is 7 zeros (as shown). This portion of the Template file is created and stored in a separate directory as specified by a Supervisor. If the required agency custom data file does not exist then only a Supervisor may

"Clear Unassigned Bits", when selected, will set all the unused bits in the entire field to zero.

design a new agency custom data file.

- After verifying that the Agency (Custom) Data are correct you must then verify that the Scratch Pad Data are set to the desired value.
- Click on the Scratch Pad folder tab to view the current value set for this field.



- After verifying that the Scratch Pad Data are correct you must then verify that the 4 bits of custom Scratch Pad Data are set to the desired value.
- Click on the Scratch Pad Custom folder tab to view the current value set for this field.

| IARK IV - BobM                 | iddlemiss           |                 |               |            |               |   |
|--------------------------------|---------------------|-----------------|---------------|------------|---------------|---|
| Lag <u>U</u> ser <u>S</u> uper | rvisor <u>H</u> elp |                 |               |            |               |   |
| Read                           | Program             | 4               | ?             |            |               |   |
|                                |                     |                 |               |            |               |   |
| Factory/Agency                 | Agency (Custom)     | Scratch Pad LCI | ) Scratch Pac | l (Custom) |               |   |
| Agency Data:                   | 00                  | 00              |               |            |               |   |
| DiamondTaxi                    | Un                  | defined (0)     |               |            | Undefined (0) | • |
|                                |                     |                 |               |            |               |   |
|                                |                     |                 |               |            |               |   |

The default value is 4 zeros (as shown). This portion of the Template file is created and stored in a separate directory as specified by a Supervisor. If the required scratch pad custom data file does not exist then only a Supervisor may design a new *scratch pad custom* data file. • After verifying that the Scratch Pad Custom Data are correct you must then verify that the LCD data bits are set to the desired value. Click on the "LCD" folder tab.

| ARK IV - BobMiddler<br>ag <u>U</u> ser <u>S</u> upervisor | niss<br>Help                      |                        |       |                        |
|---|-----------------------------------|------------------------|-------|------------------------|
| Read P  | rogram 🤀 🗍                        | ę                      |       |                        |
| Factory/Agency Ager                                       | icy (Custom) Scratch Pad          | icratch Pad (Custom)   |       | Note:                  |
| Balance:  | \$0.00<br>\$20.00<br>Icon Off (0) | Specific   Not Changed | \$ 20 | increments of nickels. |
| Balance Adjust ID:<br>Balance Adjust Date:                | No Change (0)<br>Undefined (0, 0) | Not Changed            |       |                        |
| - Internal Use  |                                   |                        |       |                        |
| LCD control:  | Toll and Balance (1)              |                        |       |                        |
| Beeper Control:   | 4 Short Tones (1)                 |                        |       |                        |
| Low Battery:  | OK. (0)                           |                        |       |                        |
| Extended LED:   |                                   |                        |       |                        |
| LED control:  |                                   |                        |       |                        |
| R/W format:   | IAG Enhanced (1)                  |                        |       |                        |

At this point the data to be programmed has been visually verified. The tag may now be programmed. Refer to the section *Program a Type 2 LCD Tag*.

### 4.5.3 Program a Type 2 LCD tag

- Load and verify the required "template" file for programming the tag. Refer to the section titled Load a Type 2 LCD Template.
- Place the tag to be programmed into the foam insert in AU drawer<sup>5</sup>. Close the AU drawer.
- If the Supervisor has set the Automatic Write function (see Supervisor Configuration of Automation parameters), the tag will be programmed. Within 1 second the "Write Successful" message is displayed (as shown further below).
- If the Automatic Write function has not been set, click on the Program button.

| MARK IV - BMiddlemiss               |  |  |  |  |  |  |  |
|-------------------------------------|--|--|--|--|--|--|--|
| <u>T</u> ag <u>U</u> ser <u>S</u> u | <u>I</u> ag <u>U</u> ser <u>S</u> upervisor <u>H</u> elp |  |  |  |  |  |  |
| Read                                | Program 🦉 🧖  |  |  |  |  |  |  |
| r                                   |  |  |  |  |  |  |  |

• Within 1 second the "Write Successful" message is displayed.

| Read                         | Program         | 4                    | ?                  |   |
|------------------------------|-----------------|----------------------|--------------------|---|
|                              |                 |                      |                    |   |
| actory/Agency Ag             | ency (Custom)   | Scratch Pad LCI      | D 📔 Scratch Pad (  | Custom)   |
| Factory                      |                 |                      |                    |   |
| Tag Type:                    | Type 2 LCD D    | )isplay (3)          |                    |   |
| Application ID:<br>Group ID: | Loli Collection | 1(1)                 |                    |   |
| Agency ID:                   | ISTHA (15)      |                      |                    |   |
| Serial Number:               | 21640 (5488 )   | hex)                 |                    |   |
| Agency                       |                 |                      |                    |   |
| Vehicle Reference:           | 328             |                      |                    | 328   |
| Vehicle Type:                | Minibus - Seal  | ts 10-15 (5)         |                    | Minibus - Seats 10-15 (5)                                       |
| Vehicle Axles:               | 2 Axles (2)     |                      |                    | 2 Axles (2)   |
| Vehicle Weight:              | <= 7000 lbs. (i | 0)                   |                    | <= 7000 lbs. (0)  |
| Vehicle Rear Tires:          | Single Rear T   | ires (O)             |                    | Single Rear Tires (0)   |
| Revenue Type:                | Private Vehicl  | le (0)               |                    | Private Vehicle (0)   |
| Commission:                  | Commissioned    | ± (0)                |                    | Commissioned (0)  |
| Mounting Location:           | Windshield (0)  | )                    |                    | Windshield (0)  |
|                              |                 |                      |                    |   |
| mplate File: D:\Wo           | rking\Test TPS  | ALCD tag \$20.tpl Ta | ag Type 2 LCD Disp | lay (3) (Modified, Should save template before programming tag) |
|                              |                 |                      |                    |   |
|                              |                 |                      |                    |   |
|                              | l ne i f        |                      |                    | coccful   |
|                              |                 |                      |                    |   |

Unless the Write Successful message is displayed first, then before opening the drawer you must wait for antenna unit green light to come on. It is not necessary to wait for the tag "beeps" to stop before opening the drawer.

### Message "Write Failed"

The following message appears whenever the tag cannot be programmed.



<sup>&</sup>lt;sup>5</sup> The cutout foam "cradle" along with optional foam inserts allows for several different tag configurations to be used. The tag orientation is shown in a specific photo appendix to this document, example: *Type 2 LCD tag orientation in the AU drawer*. More photos of the AU drawer depicting various tag orientations along with different foam inserts will be added as the TPS system is expanded to handle other tags.

### **5.0 Special Supervisor Functions**

An installer or a Supervisor may add other Supervisors and Users to the system as described in the program installation procedure section "Add Supervisors and Users".

#### Review...

To initiate that function, select the main menu item "Supervisor" then click on "Users".



The Users list is displayed. Click on "Add User" to add a user or select a user ID in the list then delete that user. When logged in, only a Supervisor may delete a User or another Supervisor from the list. There will always be at least one Supervisor in the list. E.g. in the example below, BMiddlemiss is the only Supervisor name in the list and when he is logged in he cannot delete himself from the list.

| Users          |       |      |            |              |                |        |             | ×                   |
|----------------|-------|------|------------|--------------|----------------|--------|-------------|---------------------|
| User ID        | Туре  | Read | Programmed | Commissioned | Decommissioned | Logins | Change Pass | Add User            |
| BMiddlemiss    | Super | 42   | 7          | 0            | 0              | 8      |             |                     |
| HomerSimpson   | User  | 0    | 0          | 0            | 0              | 0      |             | <u>D</u> elete User |
| Jessicariaddit | User  | U    | U          | U            | U              | U      |             |                     |
|                |       |      |            |              |                |        |             |                     |
|                |       |      |            |              |                |        |             |                     |
|                |       |      |            |              |                |        |             |                     |
|                |       |      |            |              |                |        |             |                     |
|                |       |      |            |              |                |        |             |                     |
|                |       |      |            |              |                |        |             |                     |
|                |       |      |            |              |                |        |             |                     |
|                |       |      |            |              |                |        |             |                     |
|                |       |      |            |              |                |        |             |                     |
|                |       |      |            |              |                |        |             |                     |
|                |       |      |            |              |                |        |             |                     |
|                |       |      |            |              |                |        |             |                     |
|                |       |      |            |              |                |        |             |                     |
|                |       |      |            |              |                |        |             | Close               |
|                |       |      |            |              |                |        |             |                     |

Only a Supervisor may perform the other functions listed in this section.

# 5.1 Create a new template file

In order to create a new template...

- Read a tag (any tag, the tag read will determine which folder tabs are displayed)
- Select the Factory/Agency folder tab.

Example: IAG tag template...

| ag <u>U</u> ser <u>S</u> upervis   | or <u>H</u> elp  |                                    |                        |   |                          |          | I | ctatus indicatos that tha   |
|--|--|------------------------------------|------------------------|---|--------------------------|----------|---|---|
| Read   | Program  | 4                                  | 1 4                    | <b>P</b>  |                          |          |   | tomplate will not modify the  |
|  | nobled   |                                    |                        | <u> </u>  |                          |          |   | compare will not mouly the  |
|  |  | aratah Rad Le                      | oratola Da d           | Custom  |                          |          |   | to nuclean it is a second in the  |
| - Colory Agency A  | gency (clustom)   5  | sater Pad   S                      | eraten Had             | (Custom)  |                          | 1        |   | tag when it is programmed.  |
| Factory  | Tupe 2 Interior FP   | τω                                 |                        |   |                          |          |   | To make a change, view the  |
| Application ID:  | Toll Collection (1)  | (0)                                |                        |   |                          |          |   | selections by clicking on the   |
| Group ID:  | IAG (65)   |                                    |                        |   |                          |          |   | down arrow } on the right   |
| Agency ID:<br>Serial Number:   | <ul> <li>Metropolitan Tribo</li> <li>1900106 (1000 A)</li> </ul>   | rough Area Bri<br>hev)             | dge and Tu             | nnel Authority  | y (8)                    |          |   | hand side of each field one   |
|  | 1000100 (10/ 2 #   |                                    |                        |   | Template Data            |          |   | at a time and select the  |
| Vehicle Reference:   | 200  |                                    |                        | 2   | 200                      |          |   | appropriate values for the  |
| Vehicle Type:  | Pickup Truck (3)   |                                    |                        | Ī   | Not Changed              | -        |   | specific tag  |
| Vehicle Axles:   | 2 Axles (2)  |                                    |                        | Ī   | Not Changed              |          |   | If you change any of the  |
| Vehicle Weight:  | <= 7000 lbs. (0)   |                                    |                        | Į.  | Not Changed              | <b>–</b> |   | fi you change any of the  |
| Vehicle Rear Tires:  | Single Rear Tires  | (0)                                |                        | Ī   |                          | <b>–</b> |   | Tields the "Not Changed"  |
| Revenue Type:  | Private Vehicle (0)  | I                                  |                        | Í.  | -<br>Not Changed         |          |   | status will be replaced by  |
| Commission:  | Commissioned (0)   |                                    |                        | Í   | Not Changed              | <b>-</b> |   | the selected value.   |
| Mounting Location:   | Windshield (0)   |                                    |                        | Ī   | Not Changed              | <b>–</b> | L |   |
|  |  |                                    |                        |   |                          |          | - |   |
| nple: Type   | 2 LCD tag  | templa                             | te                     |   |                          |          |   | the IAG tag example and "7<br>in the Type 2 LCD example<br>represents the sumulative to   |
| nple: Type   | 2 LCD tag  | templa                             | te                     |   |                          |          |   | the IAG tag example and "7<br>in the Type 2 LCD example<br>represents the cumulative to<br>of the first 4 field values  |
| nple: Type<br>ARK IV - BobMidd<br>ag User Supervis   | 2 LCD tag<br>Ilemiss<br>or Help  | templa                             | te                     |   |                          |          |   | the IAG tag example and "7<br>in the Type 2 LCD example<br>represents the cumulative to<br>of the first 4 field values<br>assigned as "vehicle" data.   |
| nple: Type<br>ARK IV - BobMidd<br>ag User Supervis<br>Read   | 2 LCD tag<br>Iemiss<br>or Help<br>Program  | templa                             | te                     | ? <u> </u>  |                          |          |   | the IAG tag example and "7<br>in the Type 2 LCD example,<br>represents the cumulative to<br>of the first 4 field values<br>assigned as "vehicle" data.  |
| nple: Type<br>ARK IV - BobMidd<br>ag User Supervis<br>Read<br>Auto write   | 2 LCD tag<br>Itemiss<br>or Help<br>Program   | templa                             | te                     | <u>?</u>  |                          |          |   | the IAG tag example and "7<br>in the Type 2 LCD example<br>represents the cumulative to<br>of the first 4 field values<br>assigned as "vehicle" data.   |
| nple: Type<br>ARK IV - BobMidd<br>ag User Supervis<br>Read<br>Auto write<br>Factory/Agency A   | 2 LCD tag<br>Itemiss<br>or Help<br>Program<br>enabled<br>gency (Custom) Si   | templa                             | te<br>CD Scru          | ?   | stom)                    |          |   | the IAG tag example and "7<br>in the Type 2 LCD example)<br>represents the cumulative to<br>of the first 4 field values<br>assigned as "vehicle" data.  |
| nple: Type<br>ARK IV - BobMidd<br>ag User Supervis<br>Read<br>Auto write<br>Factory/Agency A<br>Factory  | 2 LCD tag<br>Ilemiss<br>or Help<br>Program<br>enabled<br>gency (Custom) Si   | templa<br>pratch Pad   L           | te<br>CD   Scra        | ?   | stom)]                   |          | / | the IAG tag example and "7<br>in the Type 2 LCD example,<br>represents the cumulative to<br>of the first 4 field values<br>assigned as "vehicle" data.<br>Note: If the Supervisor<br>changes any field then a   |
| nple: Type<br>ARK IV - BobMidd<br>ag User Supervis<br>Read<br>Auto write<br>Factory/Agency A<br>Factory<br>Tag Type:   | 2 LCD tag<br>Iemiss<br>or Help<br>Program<br>enabled<br>gency (Custom) So<br>Type 2 LCD Displ  | templa                             | te<br>  ٩<br>CD   Sera | <b>?</b><br>atch Pad (Cus   | stom) ]                  |          |   | the IAG tag example and "7<br>in the Type 2 LCD example,<br>represents the cumulative to<br>of the first 4 field values<br>assigned as "vehicle" data.<br>Note: If the Supervisor<br>changes any field then a<br>message "(Modified. Should   |
| nple: Type<br>ARK IV - BobMidd<br>ag User Supervis<br>Read<br>Auto write<br>Factory/Agency A<br>Factory<br>Tag Type:<br>Application ID:<br>Group ID:   | 2 LCD tag<br>Iemiss<br>or Help<br>Program<br>enabled<br>gency (Custom) Si<br>Type 2 LCD Displ<br>Toll Collection (1)<br>IAG (65)   | templa                             | te                     | Image: state of the state o | stom) ]                  |          |   | the IAG tag example and "7<br>in the Type 2 LCD example,<br>represents the cumulative to<br>of the first 4 field values<br>assigned as "vehicle" data.<br>Note: If the Supervisor<br>changes any field then a<br>message "(Modified. Should<br>save template before   |
| nple: Type<br>ARK IV - BobMidd<br>ag User Supervis<br>Read<br>Auto write<br>Factory/Agency A<br>Factory<br>Tag Type:<br>Application ID:<br>Group ID:<br>Agency ID:   | 2 LCD tag<br>Itemiss<br>or Help<br>Program<br>enabled<br>gency (Custom) S<br>Type 2 LCD Displ<br>Toll Collection (1)<br>IAG (65)<br>ISTHA (15)   | templa                             | te                     | <b>?</b><br>atch Pad (Cus   | stom) ]                  |          |   | the IAG tag example and "7<br>in the Type 2 LCD example)<br>represents the cumulative to<br>of the first 4 field values<br>assigned as "vehicle" data.<br>Note: If the Supervisor<br>changes any field then a<br>message "(Modified. Should<br>save template before<br>programming tag)" appears  |
| nple: Type<br>ARK IV - BobMidd<br>ag User Supervis<br>Read<br>Auto write<br>Factory/Agency A<br>Factory/Agency A<br>Factory<br>Tag Type:<br>Application ID:<br>Group ID:<br>Agency ID:<br>Serial Number:   | 2 LCD tag<br>Itemiss<br>or Help<br>Program<br>enabled<br>gency (Custom) S<br>Type 2 LCD Displ<br>Toll Collection (1)<br>IAG (65)<br>ISTHA (15)<br>30589 (777D hex)   | templa                             | te<br>CD   Scro        | ?   | stom)                    |          |   | the IAG tag example and "7<br>in the Type 2 LCD example)<br>represents the cumulative to<br>of the first 4 field values<br>assigned as "vehicle" data.<br>Note: If the Supervisor<br>changes any field then a<br>message "(Modified. Should<br>save template before<br>programming tag)" appears<br>the bottom line to the right of   |
| nple: Type<br>ARK IV - BobMidd<br>ag User Supervis<br>Read<br>Auto write<br>Factory/Agency A<br>Factory/Agency A<br>Factory<br>Tag Type:<br>Application ID:<br>Group ID:<br>Agency ID:<br>Serial Number:<br>Agency   | 2 LCD tag<br>Itemiss<br>or Help<br>Program<br>enabled<br>gency (Custom) S<br>Type 2 LCD Displ<br>Toll Collection (1)<br>IAG (65)<br>ISTHA (15)<br>30589 (777D hex)   | templa<br>cratch Pad   L<br>ay (3) | te                     | 2<br>atch Pad (Cus  | stom)                    |          |   | the IAG tag example and "7<br>in the Type 2 LCD example)<br>represents the cumulative to<br>of the first 4 field values<br>assigned as "vehicle" data.<br>Note: If the Supervisor<br>changes any field then a<br>message "(Modified. Should<br>save template before<br>programming tag)" appears<br>the bottom line to the right of   |
| nple: Type<br>ARK IV - BobMidd<br>ag User Supervis<br>Read<br>Auto write<br>Factory/Agency A<br>Factory/Agency A<br>Factory/ID:<br>Group ID:<br>Agency ID:<br>Serial Number:<br>Vehicle Reference:   | 2 LCD tag<br>Itemiss<br>or Help<br>Program<br>enabled<br>gency (Custom) Si<br>Type 2 LCD Displ<br>Toll Collection (1)<br>IAG (65)<br>ISTHA (15)<br>30589 (777D hex)<br>72  | templa<br>cratch Pad   L<br>ay (3) | te                     | Image: state of the state o | stom) ]<br>Template Data |          |   | the IAG tag example and "7<br>in the Type 2 LCD example)<br>represents the cumulative to<br>of the first 4 field values<br>assigned as "vehicle" data.<br>Note: If the Supervisor<br>changes any field then a<br>message "(Modified. Should<br>save template before<br>programming tag)" appears<br>the bottom line to the right o<br>"Template File:" in either  |
| nple: Type<br>ARK IV - BobMidd<br>ag User Supervis<br>Read<br>Auto write (<br>Factory/Agency A<br>Factory<br>Tag Type:<br>Application ID:<br>Group ID:<br>Agency ID:<br>Serial Number:<br>Agency<br>Vehicle Reference:<br>Vehicle Type:  | 2 LCD tag<br>Itemiss<br>or Help<br>Program<br>enabled<br>gency (Custom) So<br>Type 2 LCD Displ<br>Toll Collection (1)<br>IAG (65)<br>ISTHA (15)<br>30589 (777D hex)<br>72<br>Automobile (1)<br>2 Auton (2)   | templa                             | te                     | Image: Second system       atch Pad (Custor       Image: Second system       Image: Second system <td>stom)]<br/>Template Data</td> <td></td> <td></td> <td>the IAG tag example and "7<br/>in the Type 2 LCD example)<br/>represents the cumulative to<br/>of the first 4 field values<br/>assigned as "vehicle" data.<br/>Note: If the Supervisor<br/>changes any field then a<br/>message "(Modified. Should<br/>save template before<br/>programming tag)" appears<br/>the bottom line to the right o<br/>"Template File:" in either<br/>screen. The Supervisor mus</td>   | stom)]<br>Template Data  |          |   | the IAG tag example and "7<br>in the Type 2 LCD example)<br>represents the cumulative to<br>of the first 4 field values<br>assigned as "vehicle" data.<br>Note: If the Supervisor<br>changes any field then a<br>message "(Modified. Should<br>save template before<br>programming tag)" appears<br>the bottom line to the right o<br>"Template File:" in either<br>screen. The Supervisor mus  |
| ARK IV - BobMidd<br>ag User Supervis<br>Read<br>Auto write (<br>Factory/Agency A<br>Factory/Agency A<br>Factory/D:<br>Application ID:<br>Group ID:<br>Agency ID:<br>Serial Number:<br>Agency<br>Vehicle Reference:<br>Vehicle Axles:<br>Vehicle Microb   | 2 LCD tag<br>Itemiss<br>or Help<br>Program<br>enabled<br>gency (Custom) So<br>Type 2 LCD Displ<br>Toll Collection (1)<br>IAG (65)<br>ISTHA (15)<br>30589 (777D hex)<br>72<br>Automobile (1)<br>2 Axles (2)<br>(-2 7000 lbs. (0)  | templa                             | te                     | Image: Second system   | stom) ]<br>Template Data |          |   | the IAG tag example and "7<br>in the Type 2 LCD example,<br>represents the cumulative to<br>of the first 4 field values<br>assigned as "vehicle" data.<br>Note: If the Supervisor<br>changes any field then a<br>message "(Modified. Should<br>save template before<br>programming tag)" appears<br>the bottom line to the right of<br>"Template File:" in either<br>screen. The Supervisor <u>mus</u><br>save the modified template  |
| nple: Type<br>ARK IV - BobMidd<br>ag User Supervis<br>Read<br>Auto write (<br>Factory/Agency A<br>Factory/Agency A<br>Factory ID:<br>Group ID:<br>Group ID:<br>Serial Number:<br>Agency<br>Vehicle Reference:<br>Vehicle Axles:<br>Vehicle Axles:<br>Vehicle Para Time   | 2 LCD tag<br>Itemiss<br>or Help<br>Program<br>enabled<br>gency (Custom) Si<br>Type 2 LCD Displ<br>Toll Collection (1)<br>IAG (65)<br>ISTHA (15)<br>30583 (777D hex)<br>72<br>Automobile (1)<br>2 Axles (2)<br><= 7000 lbs. (0)<br>Single Page Time   | templa                             | te                     | Pad (Cus  | stom)                    |          |   | the IAG tag example and "7<br>in the Type 2 LCD example)<br>represents the cumulative to<br>of the first 4 field values<br>assigned as "vehicle" data.<br>Note: If the Supervisor<br>changes any field then a<br>message "(Modified. Should<br>save template before<br>programming tag)" appears<br>the bottom line to the right of<br>"Template File:" in either<br>screen. The Supervisor <u>mus</u><br>save the modified template<br>and give it a new name.   |
| nple: Type<br>ARK IV - BobMidd<br>ag User Supervis<br>Read<br>Auto write<br>Factory/Agency A<br>Factory/Agency A<br>Factory/ID:<br>Group ID:<br>Group ID:<br>Serial Number:<br>Agency ID:<br>Serial Number:<br>Vehicle Reference:<br>Vehicle Reference:<br>Vehicle Axles:<br>Vehicle Keight:<br>Vehicle Rear Tires:<br>Bevenue Ture  | 2 LCD tag<br>Iemiss<br>or Help<br>Program<br>enabled<br>gency (Custom) Si<br>Type 2 LCD Displ<br>Toll Collection (1)<br>IAG (65)<br>ISTHA (15)<br>30589 (777D hex)<br>72<br>Automobile (1)<br>2 Axles (2)<br><= 7000 lbs. (0)<br>Single Rear Tires<br>Private Vehicle III                                      | templa                             | te                     | Image: state of the state                | stom)                    |          |   | the IAG tag example and "7<br>in the Type 2 LCD example)<br>represents the cumulative to<br>of the first 4 field values<br>assigned as "vehicle" data.<br>Note: If the Supervisor<br>changes any field then a<br>message "(Modified. Should<br>save template before<br>programming tag)" appears<br>the bottom line to the right o<br>"Template File:" in either<br>screen. The Supervisor <u>mus</u><br>save the modified template<br>and give it a new name.  |
| nple: Type<br>ARK IV - BobMidd<br>ag User Supervis<br>Read<br>Auto write<br>Factory/Agency A<br>Factory/Agency A<br>Factory/Di<br>Group ID:<br>Group ID:<br>Serial Number:<br>Agency UD:<br>Serial Number:<br>Vehicle Reference:<br>Vehicle Reference:<br>Vehicle Reference:<br>Vehicle Axles:<br>Vehicle Rear Tires:<br>Revenue Type:<br>Comprission  | 2 LCD tag<br>Iemiss<br>or Help<br>Program<br>enabled<br>gency (Custom) Si<br>Type 2 LCD Displ<br>Toll Collection (1)<br>IAG (65)<br>ISTHA (15)<br>30589 (777D hex)<br>72<br>Automobile (1)<br>2 Axles (2)<br>< 7000 lbs. (0)<br>Single Rear Tires<br>Private Vehicle (0)<br>Commissioned (10)                  | templa                             | te                     | Image: second               | stom)                    |          |   | the IAG tag example and "7<br>in the Type 2 LCD example)<br>represents the cumulative to<br>of the first 4 field values<br>assigned as "vehicle" data.<br>Note: If the Supervisor<br>changes any field then a<br>message "(Modified. Should<br>save template before<br>programming tag)" appears<br>the bottom line to the right o<br>"Template File:" in either<br>screen. The Supervisor <u>mus</u><br>save the modified template<br>and give it a new name.  |
| nple: Type<br>ARK IV - BobMidd<br>ag User Supervis<br>Read<br>Auto write (<br>Factory/Agency A<br>Factory/Agency A<br>Factory/Agency A<br>Factory/Agency A<br>Factory/Agency A<br>Factory/Agency A<br>Factory/Agency A<br>Factory/Agency A<br>Factory<br>Serial Number:<br>Agency ID:<br>Serial Number:<br>Agency D<br>Vehicle Reference:<br>Vehicle Reference:<br>Vehicle Asles:<br>Vehicle Asles:<br>Vehicle Asles:<br>Vehicle Rear Tires:<br>Revenue Type:<br>Commission: | 2 LCD tag<br>Iemiss<br>or Help<br>Program<br>enabled<br>gency (Custom) S<br>Type 2 LCD Displ<br>Toll Collection (1)<br>IAG (65)<br>ISTHA (15)<br>30589 (777D hex)<br>72<br>Automobile (1)<br>2 Axles (2)<br><= 7000 lbs. (0)<br>Single Rear Tires<br>Private Vehicle (0)<br>Commissioned (0)<br>Windshield (0) | templa                             | te                     | Image: second               | stom)                    |          |   | the IAG tag example and "7"<br>in the Type 2 LCD example)<br>represents the cumulative to<br>of the first 4 field values<br>assigned as "vehicle" data.<br>Note: If the Supervisor<br>changes any field then a<br>message "(Modified. Should<br>save template before<br>programming tag)" appears<br>the bottom line to the right o<br>"Template File:" in either<br>screen. The Supervisor mus<br>save the modified template fi<br>and give it a new name.   |
| nple: Type<br>ARK IV - BobMidd<br>ag User Supervis<br>Read<br>Auto write<br>Factory/Agency A<br>Factory/Agency A<br>Factory/ID:<br>Application ID:<br>Group ID:<br>Agency ID:<br>Serial Number:<br>Vehicle Reference:<br>Vehicle Reference:<br>Vehicle Reference:<br>Vehicle Axles:<br>Vehicle Axles:<br>Vehicle Axles:<br>Vehicle Rear Tires:<br>Revenue Type:<br>Commission:<br>Mounting Location:   | 2 LCD tag<br>Itemiss<br>or Help<br>Program<br>Canabled<br>gency (Custom) Si<br>Type 2 LCD Displ<br>Toll Collection (1)<br>IAG (65)<br>ISTHA (15)<br>30589 (777D hex)<br>72<br>Automobile (1)<br>2 Axles (2)<br><= 7000 lbs. (0)<br>Single Rear Tires<br>Private Vehicle (0)<br>Commissioned (0)                | templa                             | te                     | atch Pad (Cus   | stom)                    |          |   | the IAG tag example and "7:<br>in the Type 2 LCD example)<br>represents the cumulative to<br>of the first 4 field values<br>assigned as "vehicle" data.<br>Note: If the Supervisor<br>changes any field then a<br>message "(Modified. Should<br>save template before<br>programming tag)" appears<br>the bottom line to the right o<br>"Template File:" in either<br>screen. The Supervisor <u>mus</u><br>save the modified template to<br>and give it a new name.  |
| nple: Type<br>ARK IV - BobMidd<br>ag User Supervis<br>Read<br>Auto write<br>Factory/Agency A<br>Factory/Agency A<br>Factory/In<br>Group ID:<br>Agency ID:<br>Serial Number:<br>Vehicle Reference:<br>Vehicle Reference:<br>Vehicle Reference:<br>Vehicle Axles:<br>Vehicle Rear Tires:<br>Revenue Type:<br>Commission:<br>Mounting Location:   | 2 LCD tag<br>Itemiss<br>or Help<br>Program<br>enabled<br>gency (Custom) Si<br>Type 2 LCD Displ<br>Toll Collection (1)<br>IAG (65)<br>ISTHA (15)<br>30589 (777D hex)<br>72<br>Automobile (1)<br>2 Axles (2)<br><= 7000 lbs. (0)<br>Single Rear Tires<br>Private Vehicle (0)<br>Commissioned (0)                 | templa                             | te                     | atch Pad (Cus   | stom)                    |          |   | the IAG tag example and "7:<br>in the Type 2 LCD example)<br>represents the cumulative to<br>of the first 4 field values<br>assigned as "vehicle" data.<br>Note: If the Supervisor<br>changes any field then a<br>message "(Modified. Should<br>save template before<br>programming tag)" appears<br>the bottom line to the right o<br>"Template File:" in either<br>screen. The Supervisor <u>mus</u><br>save the modified template to<br>and give it a new name.<br>Note: A template file name is<br>not displayed when there is<br>template loaded |

• If required, use the selection boxes to set up the Factory/Agency tag programming template data.

Click on the Agency (Custom) folder tab. The read partition area Agency Data field for the tag just read is shown. The default value for an IAG tag is 31 zeros and for a Type 2 LCD tag is 7 zeros.

| MARK IV - Bodmiddlemiss   | MAHK IV - BobMiddlemiss  |
|---|--|
| Iag User Supervisor Help  | <u>Tag</u> <u>U</u> ser <u>Supervisor</u> <u>H</u> elp                 |
| Read Program 🗁 🦿  | Read Program 📇 🦿   |
| Auto write enabled  | Auto write enabled   |
| Factory/Agency Agency (Custom) Scratch Pad Scratch Pad (Custom) | Factory/Agency (Agency (Custom) Scratch Pad LCD Scratch Pad (Custom)   |
| Agency Data: 00000000000000000000000000000000000                | Agency Data: 0000000 Clear Unassigned Bits                             |
| Previously discussed in section 4.4.1.                          | Previously discussed in section 4.5.1.                                 |
| If there are any other Agency Custom files                      | Factory Agency Agency (Custom) Scratch Pad (LCD   Scratch Pad (Custom) |

available they will be displayed along with a selection box of other values for that file (example at right). If the value of a specific custom file must be changed refer to section

| Factory Agency | Agency (Custom) | Scratch Pad LCD | Scratch Pad (Custom) |                              |
|----------------|-----------------|-----------------|----------------------|------------------------------|
| Agency Data:   | 0000000         |                 |                      |                              |
| EmergVehicle   | BlueCross       |                 |                      | SWohnAmbulance 💌             |
|                |                 |                 |                      | BlueCross<br>StJohnAmbulance |
|                |                 |                 |                      |                              |

5.1.1 below titled Design Agency (Custom) data field.

- Click on the click on the Scratch Pad Custom folder tab. The write partition area Agency Data field for the tag just read is shown. If this value must be changed refer to section 5.1.2 titled **Design Scratch Pad** (Custom) data field.
- If creating a type 2 LCD tag template, click on the LCD folder tab. The Toll Balance parameters are shown. • If any of these values must be changed refer to the section 5.1.3 titled Set Type 2 LCD data field values.
- If there are no further fields in any of the folder tabs to be set or changed, save the new template.

After all of the data fields in all of the folder tabs are set to the desired values you must save the template so that it may be retrieved for use in programming a tag. Refer to the section titled **Save a Template** below.

### 5.1.1 Design Agency (Custom) data field

The Supervisor will design and save a data file describing a new value for the fixed Agency data field. The IAG tag format data field has 31 bits and the Type 2 LCD tag format has 7 bits. In either tag this field starts at bit #65 (referenced to the tag header MSB = bit #0).

The new data file will be included in a new template used to program a tag.

Click on the main menu item Supervisor then click on Design Agency Custom.

| MARK IV - BobMiddlemiss |     |                          |               |  |  |
|-------------------------|-----|--------------------------|---------------|--|--|
| <u>T</u> ag <u>U</u> s  | ser | <u>S</u> upervisor       | <u>H</u> elp  |  |  |
| R                       | eac | <u>U</u> sers            |               |  |  |
| Auto                    | > \ | <u>C</u> onfiguration    |               |  |  |
| Factor                  | v/A | Save <u>T</u> emplate    |               |  |  |
|                         |     | Design /                 | Agency Custom |  |  |
| Agency D                |     | Design Scratchpad Custom |               |  |  |
|                         |     |                          |               |  |  |

This is a **two-step** process. The Supervisor will first **design** a new field then secondly, set a value or values for that same new field. The field may have several sets of values each with a unique name. Within one template file, only one set of Agency Custom values may be used at any one time for programming a tag or a batch of "like tags". **IMPORTANT...** There is a maximum of 10 custom Agency data field names that may be created.

#### Step one, set up an Agency custom field

The Custom Fields dialog box is displayed.

| Custom Fields |           |       |        |  |  |
|---------------|-----------|-------|--------|--|--|
| Name          | Start Bit | Width | Add    |  |  |
|               |           |       | Change |  |  |
|               |           |       | Delete |  |  |
|               |           |       | Values |  |  |
|               |           |       |        |  |  |
|               |           |       | Close  |  |  |

The example list shows that there are no other Custom Fields names currently saved. After you design and name a new Custom Fields and then save it the list will display it.

• Click on the Add button. The Add Field dialog box is displayed. Example...

| Add Field<br>Name:<br>Start Bit: 65<br>Bit Width: 31 | Cancel         | Type the desired field <i>name</i><br>(maximum 25 characters), the <i>start</i><br><i>bit</i> position (from the tag header<br>MSB) and the <i>bit width</i> (how many<br>bits wide the field will be). |
|--|----------------|---|
| For IAG  | For type 2 LCD | Using the tag type detected, the program automatically  |
| Start = $65$ Start = $65$ Width = $31$ Width = $7$   |                | assigns the valid start bit and the available bit width.  |
|  |                | Ŭ I   |

• When the desired values are typed, click the OK button. The *Custom Fields* dialog box is shown again with the new custom field listed.

| Custom Fields |            |       | ×       |
|---------------|------------|-------|---------|
| Name          | Start Bit  | Width | Add     |
| YellowCab     | 65         | 2     | Change  |
| Note:         |            |       | Dielete |
| The ma        | aximum     |       | Delete  |
| numbe         | Values     |       |         |
| allowed       | here is 10 |       |         |
|               |            |       | Close   |

At this point the **first step** in the design process is completed. The **second step** is to assign at least one value to the field. The field may eventually have several assigned values (the total number of values that may be used depends on the bit width assigned for each field name).

• Click on the Close button.

### Step two, assign a value to the Agency custom field

• Position the cursor on the new field name. The 3 push buttons are now highlighted.



• Click on the Values button. The Values for "<chosen field name>" dialog box is displayed.

| Values for "YellowCab" |       | X      |
|------------------------|-------|--------|
| Name                   | Value | Add    |
|                        |       | Change |
|                        |       | Delete |
|                        |       |        |
|                        |       |        |
|                        |       | Close  |

• Click on the Add button. The Add Field dialog box is displayed. Example...

| Add Value to "YellowCab" | Type the<br>desired value<br>name and the | Add Value to "YellowCab" Name: fleet Value: 2 | × |
|--------------------------|---|---|---|
| OK Cancel                |   | OK Cancel                                     |   |

 When the desired value is typed, click the OK button. The Values for "<chosen field name>" dialog box is displayed again with the new value name listed.

| ues for "YellowCab" |                 | ×      |
|---------------------|-----------------|--------|
| Name<br>leet<br>10% | Value<br>2<br>1 | Add    |
|                     |                 | Delete |
|                     |                 |        |
|                     |                 |        |
|                     | ۱.              | Close  |

| At this point the <b>second step</b> in the |
|---|
| Design Agency (Custom) process is           |
| completed.                                  |

• Click on the Close button.

At this point the new Agency custom file will be available to a Supervisor when creating a new template. The Supervisor will **select** an Agency custom file having the desired value. Refer to the section titled *Create a new template*.

### 5.1.2 Design Scratch Pad (Custom) data field

The Supervisor will design and save a data file describing a new value for the scratchpad Agency data field. The IAG tag format data field has 30 bits and starts at bit #194 (referenced to the tag header MSB = bit #0). The Type 2 LCD tag format data field has 4 bits and starts at bit #72 (referenced to the tag header MSB = bit #0). The new data file may be included in a new template used to program a tag provided that tag supports the specific data field parameters.

• Click on the main menu item *Supervisor* then click on *Design Scratchpad Custom*.



This is a **two-step** process. The Supervisor will first **design** a new field then secondly, **set a value or values** for that same new field. The field may have several sets of values each with a unique name. Only one set of Scratchpad Custom values may be used at any one time for programming a tag or a batch of "like tags". **IMPORTANT**...There is a maximum of 10 Scratchpad Custom data field names that may be created.

### Step one, set up a Scratchpad custom field

• The *Custom Fields* dialog box is displayed.



The example list shows that there are no other custom fields files currently saved. After you design and name a new *Custom Fields* and then save it, the list will display it.

• Click on the Add button. The Add Field dialog box is displayed. Example for IAG tag format field...

| Add Field<br>Name:<br>Start Bit: 194<br>Bit Width: 30  | Cancel | Typ<br>(ma<br><i>bit</i> p<br>MS<br>bits | be the desired field <i>name</i><br>aximum 25 characters), the <i>start</i><br>position (from the tag header<br>B) and the <i>bit width</i> (how many<br>wide the field will be). | Add Field X<br>Name: Emerg Vehicles<br>Start Bit: 197<br>Bit Width: 2<br>OK Cancel |
|--|--------|--|---|--|
| For IAG         For type 2 LCI           Start = 194         Start = 72           Width = 30         Width = 4 |        | CD                                       | Using the tag type detected, the assigns the valid start bit and the  | e available bit width.   |

• When the desired values are typed, click the OK button. The *Custom Fields* dialog box is shown again with the new custom field listed.

| C | ustom Fields                           |                         |      |                 | ×                |
|---|--|-------------------------|------|-----------------|------------------|
|   | Name<br>Diamond Taxi<br>Emerg Vehicles | Start Bit<br>194<br>197 |      | Width<br>2<br>2 | Add              |
|   | Note:<br>The maxi                      | imum<br>of field        | ls   |                 | Delete<br>Values |
|   | allowed h                              | nere is                 | s 10 |                 | Close            |

At this point the **first step** in the design process is completed. The **second step** is to assign at least one value to the field. The field may eventually have several assigned values (the total number of values depends on the field bit width). • Click on the Close button.

#### Step two, assign a value to the Scratchpad custom field

• Position the cursor on the new field name. The 3 push buttons are now highlighted.



• Click on the Values button. The Values for "<chosen field name>" dialog box is displayed.



• Click on the Add button. The Add Field dialog box is displayed. Example...

| Add Value to "DiamondTaxi" |  |  |  |  |  |  |  |  |  |
|----------------------------|--|--|--|--|--|--|--|--|--|
| Name:                      |  |  |  |  |  |  |  |  |  |
| Value:                     |  |  |  |  |  |  |  |  |  |
|                            |  |  |  |  |  |  |  |  |  |
|                            |  |  |  |  |  |  |  |  |  |

Type the desired value *name* and the

| Add Va | ue to ' | "Diamond] | axi" |        |   | × |
|--------|---------|-----------|------|--------|---|---|
| Name:  | fleet   |           |      |        |   |   |
| Value: | 1       |           |      |        |   |   |
|        |         | ОК        |      | Cancel | 1 |   |

 When the desired value is typed, click the OK button. The Values for "<chosen field name>" dialog box is displayed again with the new value name listed.

| Values f | or "DiamondTaxi" | ×      |
|----------|------------------|--------|
| Name     | Value            | Add    |
| 15%r     | 2                | Change |
|          |                  | Delete |
|          |                  |        |
|          |                  |        |
|          |                  | Close  |

At this point the **second step** in the *Design Scratchpad Custom* process is completed.

• Click on the Close button.

At this point the new Scratchpad custom file will be available to a Supervisor when creating a new template. The Supervisor will **select** a Scratchpad custom file having the desired value. Refer to the section titled *Create a new template*.

### 5.1.3 Set Type 2 LCD data field values (includes setting a new balance)

The LCD folder comprises the data fields displayed on the LCD of the Type 2 LCD tag. The data includes "Balance" current value (in nickels) "Low Balance" icon set on or off, "Balance Adjust ID" type, and "Balance Adjust Date". The folder section "Internal Use" displays the attributes set for the physical resources of the tag.

- Click on the "LCD" folder tab to view the data fields of the tag just read.
- Click the arrow in the selection box on the "Balance" line.

| Read                | Program        |             | ?         |          |         |   |    |
|---------------------|----------------|-------------|-----------|----------|---------|---|----|
| uto write e         | nabled         |             |           |          |         |   |    |
| actory/Agency 🛛 Age | ency (Custom)  | Scratch Pad | D Scratch | n Pad (C | Custom) |   |    |
| Toll Information    |                |             |           |          |         |   |    |
| Toll Amount:        | \$0.00         |             |           |          |         | 1 |    |
| Balance:            | \$2000.00      |             |           | Not Cł   | nanged  | - | \$ |
| Low Balance:        | Low Balan      | ce (1)      |           | Not Cł   | nanged  | • |    |
| Balance Adjust ID:  | Replaceme      | nt (3)      |           | Not Cł   | nanged  | - |    |
| Balance Adjust Date | e: Jul 26 (7/2 | 5)          |           | Not Cł   | nanged  | • |    |
| Internal Use        |                |             |           |          |         |   |    |
| LCD control:        | Toll and Ba    | lance (1)   |           |          |         |   |    |
| Beeper Control:     | 4 Short Tor    | nes (1)     |           |          |         |   |    |
| Low Battery:        | OK. (0)        |             |           |          |         |   |    |
| Extended LED:       |                |             |           |          |         |   |    |
| LEU control:        | U<br>IAG Enhan |             |           |          |         |   |    |

 Click on an action within the selection box now displayed.

| Not Changed 💌        |  |
|----------------------|--|
| Clear<br>Not Changed |  |
| Specific             |  |

- You must click on "Specific" to type a new balance value.
- The "Specific" dollar value typed must be in increments of nickels. E.g. 199.95 or 200 or 200.05

|                   | type the value here |
|-------------------|---------------------|
|                   | •                   |
| Balance: \$200.00 | Specific 200.00     |

Similarly the values for the other fields may be changed...

"Low Balance"

Not Changed Icon Off (0) Low Balance (1) Not Changed

Viz.

| " | Balance Adjust I           | D" |
|---|----------------------------|----|
|   | Not Changed 📃              | 1  |
|   | Delta (1)                  |    |
|   | Delta (2)<br>Na Channa (0) |    |
|   | Not Change (U)             |    |
|   | Replacement (3)            |    |

"Balance Adjust Date"

| Not Changed 📃 💌 |
|-----------------|
| Not Changed     |
| Today           |
| Yesterday       |

### 5.2 Save a Template

The Supervisor will save a template after creating a template. Refer to the section titled "Create a template".

• To save the new template, select the main menu item "Supervisor" then click on "Save Template".



• The dialog box for saving the template appears.

| Save As<br>Save in: 🔂 | ?×<br>Test TPS         | Type a "<br>template   |
|-----------------------|------------------------|--|
| and 4 axles.tpl       |                        | directory<br>on the " <u>S</u><br>Usually,<br>(the defa<br>template<br>discretio |
| File <u>n</u> ame:    | Save                   | Never at   |
| Save as type:         | Template Files (*.tpl) | At this po   |
|                       |                        | program  |

Type a "File <u>n</u>ame" that uniquely identifies this template from all others. Select a "Save <u>in</u>" directory in which to save the template. Now click on the "<u>S</u>ave" button. Usually, all templates are saved in one directory (the default is C:\tagTemplates\\*.\*) however the template storage setup is entirely at the discretion of the Supervisor. Never attempt to change the file extension ".tpl" as shown in the "Save as <u>type</u>" field. At this point you may use the new template to program a tag (see the section "Program a tag").

### 5.3 Commission a tag

- First you must read the tag by clicking on the **Read** command button (see also "Read a tag").
- When the tag data is displayed on screen, select and click on the "Agency" folder tab.
- If the tag is already commissioned you do not have to proceed, otherwise...
- Now click on the "arrow down" } on the right hand side of the "Decommission" selection box.

| Read                             | Program                       | 9               | ?                  |                                     |                      |
|----------------------------------|-------------------------------|-----------------|--------------------|-------------------------------------|----------------------|
| actory/Agency Ag                 | ency (Custom) 🏻 🤅             | Scratch Pad   L | CD   Scratch Pad ( | Custom)                             |                      |
| Factory ———                      | Tune 21 CD Dis                | nlau (3)        |                    |                                     |                      |
| Application ID:<br>Group ID:     | Toll Collection (<br>IAG (65) | )<br> )         |                    |                                     |                      |
| Agency ID:<br>Serial Number:     | ISTHA (15)<br>21640 (5488 he  | x)              |                    |                                     |                      |
| Agency ———<br>Vehicle Reference: | 328                           |                 |                    | 328                                 | "Decommission" w     |
| Vehicle Type:                    | Minibus - Seats               | 10-15 (5)       |                    | Minibus - Seats 10-15 (5)           | be displayed only i  |
| Vehicle Axles:                   | 2 Axles (2)                   |                 |                    | 2 Axles (2)                         | the tag is currently |
| Vehicle Weight:                  | <= 7000 lbs. (0)              |                 |                    | <= 7000 lbs. (0)                    | decommissioned.      |
| Vehicle Rear Tires:              | Single Rear Tire              | es (0)          |                    | Single Rear Tires (0)               | Otherwise,           |
| Revenue Type:                    | Private Vehicle               | (0)             |                    | Private Vehicle (0)                 | Commissioned" w      |
| Commission:                      | Commissioned (                | )               |                    | Commissioned (0)                    | already be displaye  |
| Mounting Location:               | Windshield (0)                |                 |                    | Commissioned (0) Decommissioned (1) |                      |

- Select "Commission" from the list in the selection box.
- Now program the tag by clicking on the "Program" command button (see also "Program a tag").
- The message "Write Successful" will be displayed.

At this point the tag is commissioned.

### 5.4 Decommission a tag

- First you must read the tag by clicking on the **Read** command button (see also "Read a tag").
- When the tag data is displayed on screen, select and click on the "Agency" folder tab.
- If the tag is already decommissioned you do not have to proceed, otherwise...
- Now click on the "arrow down" } on the right hand side of the "Commission" selection box.

| g <u>U</u> ser <u>S</u> uperviso | or <u>H</u> elp   |                 |               |  |                          |   |
|----------------------------------|-------------------|-----------------|---------------|--|--------------------------|---|
| Read                             | Program           | 6               | ?             |  |                          |   |
| actory/Agency Ag                 | gency (Custom)    | Scratch Pad LC  | D Scratch Pad | (Custom)                               | "Com<br>displa<br>tag is | mission" will<br>ayed only if th<br>currently |
| Tag Type:<br>Application ID:     | Toll Collection ( | splay (3)<br>1) |               |  | comn                     | nissioned.                                    |
| Group ID:                        | IAG (65)          |                 |               |  | Other                    | wise  |
| Agency ID:                       | ISTHA (15)        |                 |               |  |                          |   |
| Serial Number:                   | 21640 (5488 h     | ex)             |               |  |                          | ommissioned"                                  |
| - Agency                         |                   |                 |               |  | _∥ ∣ will a              | lready be                                     |
| Vehicle Reference                | : 328             |                 |               | 328                                    | displa                   | ayed.   |
| Vehicle Type:                    | Minibus - Seats   | 10-15 (5)       |               | Minibus - Seats 10-15 (5) 💌            |                          |   |
| Vehicle Axles:                   | 2 Axles (2)       |                 |               | 2 Axles (2)                            |                          |   |
| Vehicle Weight:                  | <= 7000 lbs. (0)  | l               |               | <= 7000 lbs. (0)                       |                          |   |
| Vehicle Rear Tires:              | Single Rear Tir   | es (0)          |               | Single Rear Tires (0)                  |                          |   |
| Revenue Type:                    | Private Vehicle   | (0)             |               | Private Vehicle (0)                    |                          |   |
| Commission:                      | Commissioned      | [0]             |               | Commissioned (0)                       |                          |   |
| Mounting Location                | : Windshield (0)  |                 |               | Commissioned (0)<br>Decommissioned (1) |                          |   |

- Select "Decommission" from the list in the selection box.
- Now program the tag by clicking on the "Program" command button (see also "Program a tag").
- The message "Write Successful" will be displayed.

At this point the tag is decommissioned.

# 5.5 Configure the TPS program resources

• Select the main menu "Supervisor" item and click on the sub-menu "Configuration" item.



• The TPS Configuration folder tabs are displayed.

| TPS Configuration   |             | ×                 |
|---------------------|-------------|-------------------|
| Communications      | Diagnostics | Default View Page |
| Logout Timer        | Automation  | Agency            |
| Enable logout tim   | er          |                   |
| Logout Idle Time: 1 | 0           |                   |
|                     |             |                   |

Select the desired function by clicking on the folder tab. The selection parameters for each folder tab are described in the following sections.

### 5.5.1 Set Logout Timer parameters

This feature sets the TPS program to idle when there has been no activity for the set time limit.



If the logout timer ever forces the logout then a message appears as...



### 5.5.2 Set Agency ID

This is the Agency name displayed in the "title box" in the program banner area.

| Logout Timer    | Automation   | Agency |
|-----------------|--------------|--------|
| Agency Name: MA | RK IV        |        |
| ,               |              |        |
|                 |              |        |
|                 |              |        |
|                 |              |        |
|                 |              |        |
|                 |              |        |
|                 |              |        |
| ОК              | Cancel Apply | Help   |
|                 |              |        |

| Type the<br>When co<br>displaye<br>menu. T<br>left) will<br>main sc | e name o<br>ompleteo<br>d setting<br>he name<br>appear a<br>reen as s | of the Agen<br>d, click on "<br>gs. Click on<br>e (as showr<br>at the uppe<br>shown in th | cy ID.<br>Apply" to a<br>"OK" to ex<br>n in the exa<br>r left cornel<br>e example | ccept the<br>it from this<br>imple at<br>r of the<br>below. |  |
|---|---|---|---|---|--|
| MAR   | RK IV - BobM  | liddlemiss<br>rvisor Help   |   |   |  |
| Tar   | Deed Sube   |   |   |   |  |
| Kead Program 🗁 🦞  |   |   |   |   |  |
| A   | uto writ  | e enabled   |   |   |  |
|   |   |   |   |   |  |

### 5.5.3 Set Communications port parameters

These are the program parameters set at the PC port and then used in communication with the TPU.

The Com Port parameter default is set at COM1. If your computer has a serial port mouse connected at COM1 you must change this parameter to COM2 (or whatever external port is available for serial comms use).

#### Note:

The remaining parameters have defaults as shown. Do not change these remaining parameters unless you get authorization in writing from MARK IV INDUSTRIES LTD, for example in a software update instruction. Only at that time, to change these remaining parameters, then type the new values, then click on "Apply" to accept the displayed settings. Click on "OK" to exit from this menu.

### 5.5.4 Set Automation parameters (for tag programming)

These are the menu options provided to execute automatically when the AU drawer is closed.

| TPS Configuration                                |  |
|--|--|
| Communications Diagnostics Default View Page     |  |
| Enable Automatic Read     Enable Automatic Write | <b>Enable Automatic Read</b> provides automatic tag reading whenever the AU drawer is closed (otherwise a "manual read" from the main menu tool bar is required).  |
| OK Cancel Apply Help                             | <b>Enable Automatic Write</b> provides automatic tag<br>programming whenever the AU drawer is closed<br>(otherwise a "manual program" from the main menu tool<br>bar is required). The " <b>Auto Write Enabled</b> " banner is<br>displayed onscreen if this option is enabled (refer to the<br>screen displayed below). |
|  |  |
|  |  |

# The "Apply" button will be highlighted after changing the previously

selected option(s). To assert (use) the change(s) you must click on the "Apply" button before clicking the "OK" button.

The" **Auto Write Enabled**" banner is a **Warning** that, when the AU drawer is closed, the tag will be programmed with whatever data is currently displayed on screen. The banner appears as follows...

| MARK IV - BobM                | iddlemiss           |                 |                    |
|-------------------------------|---------------------|-----------------|--------------------|
| <u>Tag U</u> ser <u>S</u> upe | rvisor <u>H</u> elp |                 |                    |
| Read                          | Program             | 4               | ę                  |
| Auto write                    | e enabled           |                 |                    |
| Factory/Agency                | Agency (Custom)     | Scratch Pad LCI | ) Scratch Pad (Cu: |

#### 5.5.5 View Diagnostic data

Note: These two "windows" are service tools used only by MARK IV personnel.

| Diagnostics |
|-------------|
| **********  |
|             |
|             |
|             |
|             |
|             |
| Apply Help  |
|             |

### 5.5.6 Default View Page ("page" = Windows® folder tab)

The folder tabs are initially revealed after reading a tag. On the very first program bootup, the set default tab that is opened for display is "Factory/Agency". The Supervisor is allowed to select another default folder tab to

| TPS Configuration              |   | ×                        |
|--------------------------------|---|--------------------------|
| Logout Timer<br>Communications | Automation<br>Diagnostics<br>Factory/Agency<br>Factory/Agency<br>Agency (Custom)<br>Scratch Pad | Agency Default View Page |
|                                | LCD<br>Scratch Pad (Cust  | om)                      |
| OK Ca                          | ncel Appl   | Help                     |

be displayed upon reading a tag. This makes the task easier when viewing results of reading many tags when comparing specific data. Click on the arrow button on the right side of the pop down menu. Select a folder tab from the list displayed.

Example: If you are only comparing the LCD data from a batch of Type 2 LCD tags then select the folder tab "LCD" as the default. The TPS will then automatically show that set of data after each tag is read or written.

### 5.6 Exit (Quit the TPS program)

Only a Supervisor may terminate a TPS program session. The Supervisor selects the main menu item " Supervisor", then clicks on the "Exit" sub-menu item.

| MAR         | CIV -               | BobMiddleı                          | niss                               |          |
|-------------|---------------------|-------------------------------------|------------------------------------|----------|
| <u>T</u> ag | <u>U</u> ser        | <u>S</u> upervisor                  | <u>H</u> elp                       |          |
|             | Reac                | <u>U</u> sers                       |                                    | 6        |
| Au          | ito v               | <u>C</u> onfigu                     | ration                             | F        |
| Fac         | :tory/A             | Save <u>T</u> emplate               |                                    |          |
|             | Factory             | Design /<br>Design :                | Agency Custom<br>Scratchpad Custom | $\vdash$ |
| Ap<br>Gi    | oplicati<br>oup ID  | <u>D</u> iagnos<br><u>S</u> erial D | stic Window<br>ata Window          |          |
| Ag<br>Se    | gency I<br>erial Nu | E <u>x</u> it                       |                                    |          |

### **6.0 Supervisors Notes**

This section relates to a supervisor using the TPS to perform the "normal" daily tasks.

### 6.1 Changing (programming) one or more specific data fields in a tag

Sometimes all that is required is to read a tag and make a *change to a specific data field* such as Vehicle Type or Revenue Type *and also <u>not</u> change any other data currently in the tag*. This situation may apply to a tag or batch of tags that are being re-assigned to another vehicle after having been previously used by the same client for a different commercial vehicle fleet. This situation may also apply to batch programming functions, for example, commissioning or decommissioning of tags. This situation may also apply to batch programming functions where the same scratchpad data is to be programmed into tags belonging to several vehicle types.

Read the tag (or one of the tags from a batch of tags).

| MARK IV - BobMidd  | lemiss  |   |   |                                     |   |
|--|---|---|---|-------------------------------------|---|
| <u>T</u> ag <u>U</u> ser <u>S</u> upervis  | or <u>H</u> elp   |   |   |                                     |   |
| Read   | Program   | 6   | ?   |                                     |   |
| Read Auto write of Factory/Agency Application ID: Group ID: Agency ID: Serial Number: Agency Vehicle Reference: Vehicle Type: Vehicle Axles: Vehicle Weinth: | Program<br>enabled<br>gency (Custom)<br>Type 2 Interior<br>Toll Collection<br>IAG (65)<br>Metropolitan T<br>1900106 (1CF<br>200<br>Pickup Truck<br>2 Axles (2)<br>< 7000 lbs (f | Scratch Pad Sc<br>FPT (0)<br>(1)<br>riborough Area Brid;<br>E4A hex)<br>(3) | প্থ<br>ratch Pad (Custom)<br>ge and Tunnel Auth | Template Data<br>200<br>Not Changed | Note:<br>A "template" consists of <u>all</u> the data<br>fields on <u>all</u> the folder tabs shown.<br>Only the data fields that have been<br>changed are used in the programming<br>function. All other data fields that indicate |
| Vehicle Rear Tires:<br>Revenue Type:<br>Commission:<br>Mounting Location:<br>Template File:  | Single Rear Ti<br>Private Vehick<br>Commissioned<br>Windshield (0)  |   |   | Not Changed                         | "not changed" are passed over.<br>In other words<br>"Not Changed" = "not to be changed"   |

- Click on the down arrow for the field(s) to be changed and select new data. Alternatively, if the data to be changed is in another folder tab, select that folder tab and change the data.
- Save the template and give it a filename that will identify it from all the other saved template files.
- The supervisor may then program the tag(s) immediately (see *Program a tag*) or logout and allow a user to load this filename to program the pre-selected changes into the tag(s).

# 6.2 Using HELP files...

| 🤣 T500 Tag Programmer Help                  |                   |                   |                 |                      |  |  |  |
|---|-------------------|-------------------|-----------------|----------------------|--|--|--|
| <u>F</u> ile <u>E</u> dit                   | t Book <u>m</u> a | ırk <u>O</u> ptio | ns <u>H</u> elp |                      |  |  |  |
| Contents                                    | Index Back Print  |                   |                 |                      |  |  |  |
| HELP CONTENTS                               |                   |                   |                 |                      |  |  |  |
| 1.0 Add Supervisors and Users               |                   |                   |                 |                      |  |  |  |
| 2.0 Create a new template file              |                   |                   |                 |                      |  |  |  |
| 3.0 Save a template                         |                   |                   |                 |                      |  |  |  |
| 4.0 Design Agency Custom data field         |                   |                   |                 |                      |  |  |  |
| 5.0 Design Scratch Pad Custom data field    |                   |                   |                 |                      |  |  |  |
| 6.0 Load a template (for programming a tag) |                   |                   |                 |                      |  |  |  |
| 7.0 Reading and Programming Tags            |                   |                   |                 |                      |  |  |  |
|   | <u>8.0 Er</u>     | ror mes           | sages a         | and trouble shooting |  |  |  |
|   |                   |                   |                 |                      |  |  |  |

Comprehensive HELP files are available on-line. Just click on the main menu " Help " item or hit the "F1" key when the main menu is displayed. Search by function in "content" or "index".

# **Appendix - Document Revision Control**

|  | The following table | summarizes the | revision events. | Compressed cells are older revision events. |
|--|---------------------|----------------|------------------|---|
|--|---------------------|----------------|------------------|---|

| REV. | Date      | *Type   | Section      | Description and/or ECN reference                                    |
|------|-----------|---------|--------------|---|
| Α    | 28-Sep-98 | none    | n/a          | prototype document  |
| A1   | 27-Oct-98 | none    | n/a          | prototype document, DRAFT, limited release                          |
| A2   | 30-Oct-98 | none    | n/a          | document, DRAFT, first official release                             |
| A3   | 12-Nov-98 | change  | global       | reference T-500 is now T500   |
|      |           | add     | global       | section numbers   |
|      |           | change  | 3.0          | auto-installation procedure with "Setup.exe" (2 disks)              |
|      |           | add     | 5.1.3        | set LCD data for ISTHA tag programming                              |
|      |           | add     | 5.5.6        | set the default folder tab to view (when reading a tag)             |
| A4   | 25-Nov-98 | change  | global       | error "TPU drawer" is now "AU drawer"                               |
|      |           | add     | global       | ISTHA tag functions (see new table of contents)                     |
|      |           | change  | 5.6.4        | "disable tag" function has moved to new section 5.6.7               |
|      |           | add     | 5.6.7        | disable the scanner   |
|      |           | add     | 5.2.3        | LCD folder tab functions (for ISTHA tags)                           |
|      |           | add     | photos       | photo of an ISTHA tag in the AU cradle                              |
|      |           | change  | global       | custom data fields are indexed to the tag start bit (bit #0)        |
| A5   | 9-Feb-99  | change  | global       | all "ISTHA tag" references are now "Type 2 LCD tag"                 |
|      |           | delete  | global       | barcode scanner functions (see new table of contents)               |
|      |           | add     | parts        | 2 <sup>rd</sup> drawer configuration for Type 2 LCD and Fusion tags |
| A6   | 19-Mar-99 | add     | 1.1          | block diagram, same as used in Appendix-Hardware                    |
|      |           | add     | 1.2          | cable assembly part numbers   |
|      |           | add     | 3.1          | more files seen in application directory after install              |
|      |           | add     | global       | "Auto Write Enabled" banner is displayed (if enabled)               |
|      |           | change  | global       | some "selection boxes" were identified as "dialog boxes"            |
|      |           | add     | Introduction | System Installation Notes   |
|      |           | change  | Apx-hardware | In Note under table, cable references 4a/4b are now 6/7             |
|      |           | add     | Apx-hardware | Note regarding the new Universal drawer for the AU                  |
|      |           | add     | Apx-hardware | line cord and battery items to list of parts                        |
|      | 04 14 00  | Cialliy | Apx-naiuwaie |   |
| Α/   | 24-Mar-99 | add     | 2.1          | note about "forgotten" passwords                                    |
|      |           | add     | 3.0          | note about TPU connection not necessary at this point               |
|      |           | add     | 6.0, 6.1     | Supervisors notes, changing a specific data field in a tag          |
|      |           | add     | 6.2          | how to obtain the online HELP notes                                 |
| A8   | 05-Jun-08 | add     | Page 3       | FCC/IC warnings   |
|      |           | add     | 1.2          | FCC/IC warnings   |
|      |           |         |              |   |
|      |           |         |              |   |
|      |           |         |              |   |
|      |           |         |              |   |
|      |           |         |              |   |
|      |           |         |              |   |

\*TYPE is either none, add, change, clarify, delete.

# Appendix - Positions of tags in the AU drawer "cradle"

This section will be expanded as more tag types are added to the TPS capability. There are now 2 drawer configurations.

# Identification of the LPT/RMT/FPT tag drawer

The AU drawer cradle designed for LPT, RMT and FPT tags looks like this...



# Identification of the Type 2 LCD tag and Fusion tag drawer

The AU drawer cradle designed for Type 2 LCD or Fusion tags looks like this...



### Photo: FPT





### Photo: LPT



### Photo: RMT





# Photo: Type 2 LCD





# Appendix - displayed "error" messages and probable causes

# Error Message Displayed on PC

The error messages that may be displayed on the PC while reading and programming tags are as follows:

| Operation   | The end message displayed on-screen may be   |
|-------------|--|
|             | Read Failed - Could not read after multiple attempts                                     |
| Read        | Read Failed - Authentication error   |
| Transponder | Read Failed - Drawer is open   |
|             | Read Failed - Configuration error, TPU has not been configured (Contact MARK IV service) |
|             | Write failed - Agency not supported  |
| Program     | Write failed - Tag ID specified is different than last read                              |
| Transponder | Write failed - Could not program after multiple attempts                                 |
|             | Write failed - Authentication error  |
|             | Write failed - Drawer is open  |

# Asynchronous Fault Report Codes Displayed on PC

| Error Type              | The error message displayed on-screen may be  |
|-------------------------|---|
| Configuration<br>Error  | "Configuration Error"<br>TPU has not been configured (Contact MARK IV service)  |
| Authentication<br>Error | "Authentication Error"<br>The authorization code entered on start up is not valid.<br>Supervisor must exit program and re-enter the authorization code. |

### Tag programmer troubleshooting

#### <u>Can't log in</u>

- The user name and password is case sensitive. Make sure it has been entered correctly.
- The first time a new user is created the password field must be left blank.
- Check that the users exists (check Supervisor | Users menu item).

#### Authentication Error

- Ensure that you have entered the correct authorization code for the tag programmer being used. Each tag programmer has a different authorization code.
- Has the tag programmer been moved between PCs? Is so, the authorization codes you enter must also be swapped.

#### Can't read or program transponders

- Verify that a transponder is present in the antenna unit.
- Check the PC COM port configuration (Supervisor | Configuration menu item, Communications tab). For example, if the mouse is on COM1, change the tag programmer port to COM2. By default, COM1 is used.
- Verify the connection between the TPU and the PC. Check for any loose RF and data cables.
- The data cable must be connected between the tag programmer port labeled "RF Control" and the antenna unit port labeled "RF Control". (See also the Note in the diagram in section 1.1.)
- Verify the PC COM port configuration under the Supervisor | Configuration | menu.

#### Communication Error

Can be caused by one of the following:

- Check serial connection between PC and the tag programmer unit.
- Check serial connection between AU and the tag programmer unit.
- Check that TPU power is on.
- Check the PC COM port configuration. If the tag programmer is connected via COM2, this must be reflected in the Supervisor | Configuration menu, under the "Communications" tab.

# Appendix - Viewing and/or printing log files

These are text files located in the same directory in which the program tps.exe resides.

| 🙉 Exploring - Test TPS                             |                        |                     |                  |
|--|------------------------|---------------------|------------------|
| <u>File Edit View Go Favores I</u> ools <u>H</u> e | alp                    |                     |                  |
| Back Forward Up                                    | Copy Paste Undo Delete | Properties Views    |                  |
| Address 🗅 D:\Working\Test TPS                      |                        |                     | ×                |
| All Folders  | Name                   | Size Type           | Modified         |
|  | TPSRDLCD19990211.TXT   | 8KB Text Document   | 2/11/99 9:06 AM  |
| N N  | Tpstag.rpt             | 2KB RPT File        | 2/11/99 9:06 AM  |
|  | TPSWRLCD19990211.TXT   | 5KB Text Document   | 2/11/99 9:06 AM  |
|  | TPSRD19990211.TXT      | 17KB Text Document  | 2/11/99 9:06 AM  |
|  | TPSWR19990211.TXT      | 8KB Text Document   | 2/11/99 9:06 AM  |
|  | Tps.gid                | 11KB GID File       | 2/11/99 8:41 AM  |
|  | E TPSRDLCD19990210.TXT | 37KB Text Document  | 2/10/99 2:45 PM  |
|  | E TPSRD19990210.TXT    | 12KB Text Document  | 2/10/99 2:14 PM  |
|  | E TPSWRLCD19990210.TXT | 3KB Text Document   | 2/10/99 2:06 PM  |
|  | E TPSWR19990210.TXT    | 3KB Text Document   | 2/10/99 11:56 AM |
|  | E TPSWR19990209.TXT    | 32KB Text Document  | 2/9/99 2:39 PM   |
|  | E TPSRD19990209.TXT    | 32KB Text Document  | 2/9/99 2:38 PM   |
|  | E TPSRDLCD19990209.TXT | 83KB Text Document  | 2/9/99 2:26 PM   |
|  | TPSWRLCD19990209.TXT   | 78KB Text Document  | 2/9/99 2:26 PM   |
|  | LCD tag \$20.tpl       | 1KB TPL File        | 2/9/99 2:20 PM   |
|  | 🚺 🔊 Output.prn         | 24KB PRN File       | 2/9/99 1:53 PM   |
|  | TPS old1.zip           | 1,131KB WinZip File | 2/9/99 1:35 PM   |
|  | 🖉 Tps.hlp              | 642KB Help File     | 2/9/99 11:11 AM  |
|  | TPS.exe                | 659KB Application   | 2/9/99 7:43 AM   |

Files are identified as follows...(yeardate is coded, typical e.g. 19990211 being 1999Feb11)

| TPSRDyeardate.TXT    | Read IAG tags         |
|----------------------|-----------------------|
| TPSWRyeardate.TXT    | Write IAG tags        |
| TPSRDLCDyeardate.TXT | Read Type 2 LCD tags  |
| TPSWRLCDyeardate.TXT | Write Type 2 LCD tags |

#### Notes...

- 1) If an activity was not performed (e.g. you did not write any Type 2 LCD tags) then that log file will not be created.
- 2) There may be more than one set of log files if the program was exited and subsequently re-started.

To print a log file, open it with a spread sheet editor (e.g. *Excel®*) and print it.

See an example using Excel® starting on the next page...

### Start Excel....

### Click "File", then click "Open".

Example: select the file TPSWRLCD19990211.TXT by clicking on it twice.

| 🗙 Microsoft Excel - Book1      |  |       |
|--------------------------------|--|-------|
| 🕙 Eile Edit View Insert Format | : <u>T</u> ools <u>D</u> ata <u>W</u> indow <u>H</u> elp | _ B × |
| □ 🚅 🖬 🚑 ि 🍼 👗 🖻                | h 🛍 🝼 Μ - Μ - Μ - 🕷 📽 Σ 🗛 🏄 ដ 📶 🧶 🚜 100% - 😨             |       |
| Arial + 10 + 1                 |  |       |
|                                |  |       |
|                                |  |       |
|                                |  |       |
| 2                              |  |       |
| 3                              |  |       |
| 4                              |  |       |
| 5                              | Open ? X   |       |
| 6                              | Look in: 🗋 Test TPS 🔹 🔁 🔁 🔯 🕼 📰 📰 📰 🗾                    |       |
| /                              |  |       |
| 9                              |  |       |
| 10                             | E TPSRD19990209:171 E TPSRD19990210.171 Cancel           |       |
| 11                             | I TPSRD19990211.TXT                                      |       |
| 12                             | TPSRDLCD19990209.TXT                                     |       |
| 13                             | IPSRDLCD19990210.TXT                                     |       |
| 14                             | TPSRDLCD19990211.TXT                                     |       |
| 15                             | III TP5WR19990209.TXT                                    |       |
| 16                             | ≝  TPSWR19990210.TXT                                     |       |
| 17                             | ■ TPSWR19990211.TXT                                      |       |
| 19                             |  |       |
| 20                             | Find files that match these search criteria:             |       |
| 21                             | File name:     Text or property:     Eind Now            |       |
| 22                             | Files of type: Text Files (*.orn; *.txt; *.csv)          |       |
| 23                             |  |       |
| 24                             | 13 rile(s) round.  |       |
| 25                             |  |       |
| 26                             |  |       |

A dialog box titled "Text Import Wizard - Step 1 of 3" appears.



| Select "Delimited" for the |
|----------------------------|
| file type.                 |
| Click on "Next".           |

A dialog box titled "Text Import Wizard - Step 2 of 3" appears.

| rext miport wizaru - step z or s   |  |   | ? × |  |  |
|--|--|---|-----|--|--|
| This screen lets you set the delimiters your data contains. You can see<br>how your text is affected in the preview below.               |  |   |     |  |  |
| Delimiters   | □ T <u>r</u> eal   | t consecutive delimiters as one   |     |  |  |
| Tab     Semicolon     Space     Qther:     Text Qualifier:     Text Qualifier:     Text Qualifier:                                       |  |   |     |  |  |
| Data preview   |  |   |     |  |  |
|  |  |   |     |  |  |
| User ID Date   | Time Tem;  | plate [Tag Type   |     |  |  |
| BobMiddlemiss 1999/02/11   | 109 · 04 · 02 k IIni   | known) Type 2 ICD D   | 1   |  |  |
| BobMiddlemiss 1999/02/11<br>BobMiddlemiss 1999/02/11   | 09:04:02 <un<br>09:04:07 <un< td=""><td>known&gt; Type 2 LCD D<br/>known&gt; Type 2 LCD D</td><td>i</td></un<></un<br>   | known> Type 2 LCD D<br>known> Type 2 LCD D  | i   |  |  |
| BobMiddlemiss 1999/02/11<br>BobMiddlemiss 1999/02/11<br>BobMiddlemiss 1999/02/11   | 09:04:02   Uni<br>09:04:07   Uni<br>09:04:12   Uni   | known> Type 2 LCD D<br>known> Type 2 LCD D<br>known> Type 2 LCD D   |     |  |  |
| BobMiddlemiss 1999/02/11<br>BobMiddlemiss 1999/02/11<br>BobMiddlemiss 1999/02/11<br>BobMiddlemiss 1999/02/11<br>BobMiddlemiss 1999/02/11 | 09:04:02   < Un <br>09:04:07   < Un <br>09:04:12   < Un <br>09:06:43   < Un <br>09:06:40   < Un  | known> Type 2 LCD D<br>known> Type 2 LCD D<br>known> Type 2 LCD D<br>known> Type 2 LCD D<br>known> Type 2 LCD D |     |  |  |
| BobMiddlemiss 1999/02/11<br>BobMiddlemiss 1999/02/11<br>BobMiddlemiss 1999/02/11<br>BobMiddlemiss 1999/02/11<br>BobMiddlemiss 1999/02/11 | 09:04:02 <un<br>09:04:07 <un<br>09:04:12 <un<br>09:06:43 <un<br>09:06:48 <un< td=""><td>known&gt; Type 2 LCD D<br/>known&gt; Type 2 LCD D<br/>known&gt; Type 2 LCD D<br/>known&gt; Type 2 LCD D<br/>known&gt; Type 2 LCD D</td><td></td></un<></un<br></un<br></un<br></un<br> | known> Type 2 LCD D<br>known> Type 2 LCD D<br>known> Type 2 LCD D<br>known> Type 2 LCD D<br>known> Type 2 LCD D |     |  |  |

Select "Comma" for the Delimiters type. Make sure you de-select all the other delimiter types. **Do not** select "Treat consecutive delimiters as one".

Click on "Next".

A dialog box titled "Text Import Wizard - Step 3 of 3" appears

| Text Import Wizard -                           | Step 3 of 3                                 |                           |                                       | ? ×              |
|--|---|---------------------------|---------------------------------------|------------------|
| This screen lets you sel<br>the Data Format.   | ect each column ar                          | nd set 🚽                  | Column data forn<br>• <u>G</u> eneral | nat              |
| 'General' converts nur<br>values to dates, and | meric values to nur<br>all remaining value: | nbers, date<br>s to text. | C <u>T</u> ext<br>C <u>D</u> ate: MD  | Y 💌              |
|  |   |                           | 🔿 Do not impo                         | rt column (Skip) |
| Data preview                                   | General                                     | General                   | General                               | General          |
| User ID  | Date  | Time                      | Template                              | Tag Type         |
| BobMiddlemiss<br>BobMiddlemiss                 | 1999/02/11                                  | 09:04:02                  | <unknown></unknown>                   | Type 2 LCD Di    |
| BobMiddlemiss                                  | 1999/02/11                                  | 09:04:12                  | (Unknown)                             | Type 2 LCD Di    |
| BobMiddlemiss                                  | 1999/02/11                                  | 09:06:43                  | <unknown></unknown>                   | Type 2 LCD Di    |
|  | 1999/02/11                                  | 107.00.40                 | K UNKNOWN>                            |                  |
|  |   | Cancel                    | < <u>B</u> ack                        | Next > Finish    |

For printing the file, it is usually not necessary to format the columns to anything else other than "General".

Click on "Finish".

At this point the file will be imported and the first 11 columns (there are many more columns than this) of the Excel work sheet will look something like this...(the example only has 5 records in it)

| User ID           | Date    | Time    | Template                      | Тад Туре                     | Application               | Group ID | Agency ID  | Serial<br>Number    | Vehicle<br>Reference | Vehicle<br>Type                  |
|-------------------|---------|---------|-------------------------------|------------------------------|---------------------------|----------|------------|---------------------|----------------------|----------------------------------|
| BobMiddle<br>miss | 2/11/99 | 9:04:02 | <unknown<br>&gt;</unknown<br> | Type 2<br>LCD<br>Display (3) | Toll<br>Collection<br>(1) | IAG (65) | ISTHA (15) | 21640<br>(5488 hex) | 328                  | Minibus -<br>Seats 10-<br>15 (5) |
| BobMiddle<br>miss | 2/11/99 | 9:04:07 | <unknown<br>&gt;</unknown<br> | Type 2<br>LCD<br>Display (3) | Toll<br>Collection<br>(1) | IAG (65) | ISTHA (15) | 21640<br>(5488 hex) | 328                  | Minibus -<br>Seats 10-<br>15 (5) |
| BobMiddle<br>miss | 2/11/99 | 9:04:12 | <unknown<br>&gt;</unknown<br> | Type 2<br>LCD<br>Display (3) | Toll<br>Collection<br>(1) | IAG (65) | ISTHA (15) | 21640<br>(5488 hex) | 328                  | Minibus -<br>Seats 10-<br>15 (5) |
| BobMiddle<br>miss | 2/11/99 | 9:06:43 | <unknown<br>&gt;</unknown<br> | Type 2<br>LCD<br>Display (3) | Toll<br>Collection<br>(1) | IAG (65) | ISTHA (15) | 21640<br>(5488 hex) | 328                  | Minibus -<br>Seats 10-<br>15 (5) |
| BobMiddle<br>miss | 2/11/99 | 9:06:48 | <unknown<br>&gt;</unknown<br> | Type 2<br>LCD<br>Display (3) | Toll<br>Collection<br>(1) | IAG (65) | ISTHA (15) | 21640<br>(5488 hex) | 328                  | Minibus -<br>Seats 10-<br>15 (5) |

You may now select the columns for print and use the Excel function "Set Print Area" as the print manager. You may also search the Excel worksheet for specific records and print them one at a time.

#### Note:

If you simply want to review the raw log data you may use a text editor like Word98 to view the file. However the records are not parsed for easy viewing in this manner. See the example on the next page.

Viz. (the same example file as shown in the Excel format above, TPSWRLCD19990211.TXT, is displayed on screen using *Word*98® text file import) "User ID","Date","Time","Template","Tag Type","Application ID","Group ID","Agency ID","Serial Number", "Vehicle Reference", "Vehicle Type", "Vehicle Axles", "Vehicle Weight", "Vehicle Rear Tires", "Revenue Type", "Decommission", "Mounting Location", "Agency Data 1", "Agency (Custom 2)", "Agency (Custom 3)", "Agency (Custom 4)", "Agency (Custom 5)", "Agency (Custom 6)", "Agency (Custom 7)", "Agency Data 2", "Scratch Pad (custom 2)", "Scratch Pad (custom 3)", "Scratch Pad (custom 4)", "Balance Adjustment ID", "Low Balance", "Balance Adjustment Date", "Extented LED", "LED Control", "LCD Control", "Beep Control", "TM Reader ID", "TM Date", "TM Time", "TC Agency ID", "TC Plaza ID", "TC Lane ID", "TC Date", "TC Time", "TC Vehicle Class", "Reserve", "Balance Amount", "Low Battery", "Toll Amount", "R/W Format", "TC TXN Number", "TC Checksum", "Raw Data" BobMiddlemiss,1999/02/11,09:04:02,<Unknown>,Type 2 LCD Display (3),Toll Collection (1),IAG (65),ISTHA (15),21640 (5488 hex),328,Minibus - Seats 10-15 (5),2 Axles (2),<= 7000 lbs. (0),Single Rear Tires (0), Private Vehicle (0), Commissioned (0), Windshield (0), Undefined(0000000), Unassigned, Unassigned, Unassigned, Unassigned, Unassigned, Unassigned, Undefined( 0000), Unassigned, Unassigned, Unassigned, No Change (0), Icon Off (0), Undefined (0, 0), 0, 0, Toll and Balance (1),4 Short Tones (1),0,Undefined (0),00:00:00,0,127,0,Feb 11 (2, 11),09:04:02,0,0,\$20.00,0,\$0.00,IAG Enhanced (1),0 (0 hex),1835 (72B hex),ECC11E00A910520000000050000000007F012D2204000019000010000072B BobMiddlemiss,1999/02/11,09:04:07,<Unknown>,Type 2 LCD Display (3),Toll Collection (1),IAG (65),ISTHA (15),21640 (5488 hex),328,Minibus - Seats 10-15 (5),2 Axles (2),<= 7000 lbs. (0),Single Rear Tires (0), Private Vehicle (0), Commissioned (0), Windshield (0), Undefined(0000000), Unassigned, Unassigned, Unassigned, Unassigned, Unassigned, Unassigned, Undefined( 0000), Unassigned, Unassigned, Unassigned, No Change (0), Icon Off (0), Undefined (0, 0), 0, 0, Toll and

Balance (1),4 Short Tones (1),0,Undefined (0),00:00:00,0,127,0,Feb 11 (2,

11),09:04:07,0,0,\$20.00,0,\$0.00,IAG Enhanced (1),0 (0 hex),58042 (E2BA

hex),ECC11E00A91052000000005000000007F012D220E000019000010000E2BA

BobMiddlemiss,1999/02/11,09:04:12,<Unknown>,Type 2 LCD Display (3),Toll Collection (1),IAG (65),ISTHA (15),21640 (5488 hex),328,Minibus - Seats 10-15 (5),2 Axles (2),<= 7000 lbs. (0),Single

Rear Tires (0), Private Vehicle (0), Commissioned (0), Windshield (0), Undefined(0000000), Unassigned, Unassigned, Unassigned, Unassigned, Unassigned, Undefined(

0000), Unassigned, Unassigned, Unassigned, No Change (0), Icon Off (0), Undefined (0, 0), 0, 0, Toll and Balance (1), 4 Short Tones (1), 0, Undefined (0), 00:00:00, 0, 127, 0, Feb 11 (2,

11),09:04:12,0,0,\$20.00,0,\$0.00,IAG Enhanced (1),0 (0 hex),25683 (6453

hex), ECC11E00A910520000000000000000007F012D22180000190000100006453

BobMiddlemiss,1999/02/11,09:06:43,<Unknown>,Type 2 LCD Display (3),Toll Collection (1),IAG (65),ISTHA (15),21640 (5488 hex),328,Minibus - Seats 10-15 (5),2 Axles (2),<= 7000 lbs. (0),Single Rear Tires (0),Private Vehicle (0),Commissioned (0),Windshield

(0),Undefined(0000000),Unassigned,Unassigned,Unassigned,Unassigned,Unassigned,Unassigned,Unassigned,Undefined( 0000),Unassigned,Unassigned,Unassigned,No Change (0),Icon Off (0),Undefined (0, 0),0,0,Toll and Balance (1),4 Short Tones (1),0,Undefined (0),00:00:00,0,127,0,Feb 11 (2,

11),09:06:43,0,0,\$20.00,0,\$0.00,IAG Enhanced (1),0 (0 hex),712 (2C8

hex),ECC11E00A91052000000005000000007F012D235600001900001000002C8

BobMiddlemiss,1999/02/11,09:06:48,<Unknown>,Type 2 LCD Display (3),Toll Collection (1),IAG (65),ISTHA (15),21640 (5488 hex),328,Minibus - Seats 10-15 (5),2 Axles (2),<= 7000 lbs. (0),Single Rear Tires (0),Private Vehicle (0),Commissioned (0),Windshield

(0),Undefined(0000000),Unassigned,Unassigned,Unassigned,Unassigned,Unassigned,Unassigned,Unassigned,Undefined( 0000),Unassigned,Unassigned,Unassigned,No Change (0),Icon Off (0),Undefined (0, 0),0,0,Toll and

Balance (1),4 Short Tones (1),0,Undefined (0),00:00:00,0,127,0,Feb 11 (2,

11),09:06:48,0,0,\$20.00,0,\$0.00,IAG Enhanced (1),0 (0 hex),48608 (BDE0

hex),ECC11E00A91052000000005000000007F012D2360000019000010000BDE0

BobMiddlemiss,1999/02/11,10:47:39,<Unknown>,Type 2 LCD Display (3),Toll Collection (1),IAG (65),ISTHA (15),21640 (5488 hex),328,Minibus - Seats 10-15 (5),2 Axles (2),<= 7000 lbs. (0),Single

Rear Tires (0), Private Vehicle (0), Commissioned (0), Windshield (0), Undefined(0000000), Unassigned, Unassigned, Unassigned, Unassigned, Unassigned, Undefined( 0000), Unassigned, Unassigned, Unassigned, No Change (0), Icon Off (0), Undefined (0, 0), 0, 0, Toll and

Balance (1),4 Short Tones (1),0,Undefined (0),00:00:00,0,127,0,Feb 11 (2,

11),10:47:39,0,0,\$20.00,0,\$0.00,IAG Enhanced (1),0 (0 hex),7452 (1D1C

hex),ECC11E00A910520000000050000000007F012D57CE0000190000100001D1C

# Printing the contents of the tag currently displayed

Read or program a tag. Now click on the printer icon in the menu bar. The following dialog box is displayed.



The printed report is identical to the format displayed for "Tag - Print Preview".

To view the print preview on screen, click on the "Tag" menu item, then click on the "Print Preview" item in the pop-up list.

| MARK IV - BobMiddlemiss |                |              |         |            |  |
|-------------------------|----------------|--------------|---------|------------|--|
| <u>T</u> ag             | <u>U</u> ser   | <u>S</u> up  | ervisor | <u>H</u> e |  |
| R                       | <u>e</u> ad Ta | g            | Ctrl+R  |            |  |
| Program Tag Ctrl+P      |                |              |         |            |  |
| <u>P</u> rint           |                |              |         |            |  |
| P                       | rint Pre       | <u>v</u> iew |         | l I        |  |
| P                       | rint Set       | up           |         |            |  |

The "print preview" formats for various tags appear in the next few pages.

# Print preview of a tag type 2 LCD "Read Tag Contents"

### without loading a template

| READ TAG CONTENTS REPORT<br>User ID: BobMiddlemiss<br>Date: 1999/03/19 Time: (  | 18:59:40   |         | READ TAG CONTEN<br>User ID: BobMic<br>Date: 1999/03/  |
|---|--|---------|---|
| Tad Type<br>Application ID<br>Group ID<br>Agency ID<br>Serial Number<br>Vehicle Reference<br>Vehicle Reference<br>Vehicle Rear Tires<br>Revenue Type<br>Decommission<br>Mounting Location<br>Agency (Custom 2)<br>Agency (Custom 2)<br>Agency (Custom 3)<br>Agency (Custom 4)<br>Agency (Custom 4)<br>Agency (Custom 6)<br>Agency (Custom 7)<br>Agency (Custom 7)<br>Scratch Pad (Custom 4)<br>Scratch Pad (Custom 4)<br>Scratch Pad (Custom 7)<br>Balance Adjustment ID<br>Low Balance<br>Balance Adjustment Date<br>Extented LED<br>LED Control<br>Beep Control<br>Beep Control<br>M Reader ID<br>TM Date<br>TM Time<br>TC Agency ID<br>TC Lane ID<br>TC Date<br>TC Time<br>TC Vehicle Class<br>Reserve<br>Balance Amount<br>Low Battery<br>Toll Amount<br>R/W Format<br>TC Checksum | Type 2 LCD Display (3)<br>Toll Collection (L)<br>DAG (65)<br>ISTHA (15)<br>30589 (777D hex)<br>72<br>Automobile (1)<br>2 Axles (2)<br><= 7000 lbs. (0)<br>Single Rear Tires (0)<br>Private Vehicle (0)<br>Commissioned (0)<br>Windsfineld (0)<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassig | Parie 1 | Taq Type<br>Application ID<br>Group ID<br>Agency ID<br>Serial Number<br>Vehicle Referent<br>Vehicle Referent<br>Vehicle Rear T<br>Revenue Type<br>De commission<br>Mounting Locat'<br>Agency Custom<br>Agency (Custom<br>Agency ( |
| iemplate file: <unknown></unknown>  |  | Page 1  | iempiate file:  |

### with loading a template

| READ TAG CONTENTS REPORT   |  |        |
|--|--|--------|
| User ID: BobMiddlemiss   | ·  |        |
| Date: 1999/03/19 Time:   | 09:03:56   |        |
| Tag Type<br>Application ID<br>Group ID<br>Agency ID<br>Serial Number<br>Vehicle Reference<br>Vehicle Reference<br>Vehicle Axles<br>Vehicle Kear Tires<br>Revenue Type<br>Decommission<br>Mounting Location<br>Agency Data 1<br>Agency (Custom 2)<br>Agency (Custom 2)<br>Agency (Custom 3)<br>Agency (Custom 4)<br>Agency (Custom 5)<br>Agency (Custom 7)<br>Agency Custom 10<br>Scratch Pad (custom 4)<br>Scratch Pad (custom 4)<br>Balance Adjustment ID<br>Low Balance<br>Balance Adjustment Date<br>Extented LED<br>LED Control<br>Beep Control<br>Diff Date<br>TC Agency ID<br>TC Lane ID<br>TC Date<br>TC Time<br>TC Vehicle Class<br>Reserve<br>Balance Amount<br>Low Battery<br>Toll Amount<br>R/W Format<br>TC Checksum | Type 2 LCD Display (3)<br>Toll Collection (1)<br>IAG (65)<br>ISTMA (15)<br>30589 (7770 hex)<br>72<br>Automobile (1)<br>2 Axles (2)<br>(= 7000 lbs. (0)<br>Single Rear Tires (0)<br>Private Vehicle (0)<br>Commissioned (0)<br>Windshield (0)<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassign |        |
| Template file: C:\TagTem   | plates\Lcd, \$2000.tpl   | Page 1 |

# Print preview of a tag type 2 LCD "Write (Program) Tag Contents

### without loading template

| with loading a te | mp | late |
|-------------------|----|------|
|-------------------|----|------|

| WRITE TAG CONTENTS REPORT   |        | WRITE TAG CONTENTS REPORT  |
|---|--------|--|
| User ID: BobMiddlemiss  |        | User ID: BobMiddlemiss   |
| Date: 1999/03/19 Time: 09:12:39   |        | Date: 1999/03/19 Time: 09:14:32  |
| Taq Type To Toll Collection (1)<br>Appendy ID Toll Collection (1)<br>Agency ID Toll Collection (1)<br>Serial Number 20589 (770 hex)<br>Vehicle Reference 72<br>Vehicle Reference 72<br>Vehicle Rear Tires Single Rear Tires (0)<br>Revenue Type Private Vehicle (0)<br>Decommission Commissioned (0)<br>Wehicle Weight (= 2000000)<br>Agency (Custom 2) Unassigned<br>Agency (Custom 3) Unassigned<br>Agency (Custom 6) Unassigned<br>Agency (Custom 7) Unassigned<br>Scratch Pad (Custom 2) Unassigned<br>Scratch Pad (Custom 2) Unassigned<br>Scratch Pad (Custom 2) Unassigned<br>Balance Adjustment ID Replacement (3)<br>EB Bance Adjustment ID Replacement (3)<br>EB Bance Adjustment ID Nort Tonls (1)<br>Balance Adjustment ID Nort Tonls (1)<br>Balance Adjustment ID Nort Tonls (1)<br>Th Bate Undefined (0)<br>Th Date Undefined (0)<br>Th Time 0<br>Cocooco<br>Th Paza ID 127<br>TL Lane ID 0<br>TC TAR Menty ID 200000<br>Source Adjustment ID Agency (1)<br>Balance Anount \$200000<br>Th Cotte Mate ID 0<br>TC Totte Mather 0<br>O<br>TC Totte 1<br>DA Agency (Custom 2)<br>TC Checksum 2<br>D<br>TC Chec |        | Tag Type Type 2 LCD Display (3)<br>for QU DD DG (65)<br>Agency ID DF TSTRA (15)<br>Sental Envergence 3250 (770 hex)<br>Weinicle Type Automobile (1)<br>Weinicle Axles 2 Axles (2)<br>Weinicle Weinight <= 7000 105. (0)<br>Becommission Commissioned (0)<br>Weinicle Rear Tires Private Veinicle (0)<br>Becommission Commissioned (0)<br>Weinicle Rear Tires Private Veinicle (0)<br>Becommission Commissioned (0)<br>Weinicle Rear Tires Undefined (0000000)<br>Weinicle Rear Tires Undefined (0000000)<br>Weinicle Rear Tires Undefined (000000)<br>Weinicle Rear Tires Undefined (00000)<br>Scratch Pad (custom 2) Unassigned<br>Scratch Pad (custom 3) Unassigned<br>Scratch Pad (custom 4) Undefined (0)<br>The State Undefined (0)<br>The Reader ID<br>Scratch Scratch Scratch 4<br>Scratch Scratch 4<br>Scratch 4<br>Scr |
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# Print preview of an IAG tag "Read Tag Contents"

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| User ID: BobMiddlemiss<br>Date: 1999/03/19 Time: 09:05:36<br>Taq Type I Type 2 Interior FPT (0)<br>Agency ID TaG (65)<br>Agency ID Metropolitan Triborough Area Bridge and Tunnel Authority (8)<br>Serial Number 200<br>Wethicle Reference 200<br>Wethicle Wright Schuber (3)<br>Wethicle Wright Schuber (1)<br>Revenue Type Private Vehicle (0)<br>Decommissional (0)<br>Mounting Location Wrindshield (0)<br>Agency (Listom 3) Unassigned<br>Agency (Listom 6) Unassigned<br>Agency (Listom 6) Unassigned<br>Agency (Listom 7) Unassigned<br>Agency (Listom 8) Unassigned<br>Agency (Listom 1) Unassigned<br>Scratch Pad (Listom 2) Unassigned<br>Scratch Pad (Listom 3) Unassigned<br>Scratch Pad (Listom 1) Unassigned<br>Scratch Pad (Listom 2) Unassigned<br>Scratch Pad (Listom 1) Unassigned<br>Scratch Pad (Listom 2) Unassigned<br>S | READ TAG CONTENTS REPORT   |   |   |
|--|--|---|---|
| Date: 1999/03/19 Time: 09:05:36         Tad_Type       Type 2 Diterior FPT (0)<br>Application ID         Group ID       Tol Collection (1)         Group ID       Tol Collection (1)         Serial Number       150000 (LFF4A hex)         Wethicle Axles       2 Axles (2)         Wethicle Rear Tires       Single Rear Tires (0)         Revenue Type       Private Vehicle (0)         Decommission       Commissioned (0)         Mgency (Lustom 2)       Unassigned         Mgency (Lustom 3)       Unassigned         Mgency (Lustom 1)       Unassigned         Scrattor Pad (Lustom 1)       U  | User ID: BobMiddlemiss   |   |   |
| Tag Type<br>Application ID<br>Toll Collection (1)<br>Toll Collection (2)<br>Toll Collection (3)<br>Toll Collection (4)<br>Toll Coll Coll Coll Collection (4)<br>Toll Coll Coll Coll Coll Coll Coll Coll   | Date: 1999/03/19 Time: 0   | 09: O5: 36  |   |
|  | Date: 1999/03/19 Time: C<br>Date: 1999/03/19 Time: C<br>Application ID<br>Group ID<br>Agency ID<br>Serial Number<br>Vehicle Reference<br>Vehicle Ayles<br>Vehicle Weight<br>Vehicle Weight<br>Vehicle Rear Tires<br>Revenue Type<br>Decommission<br>Mounting Location<br>Agency (Custom 2)<br>Agency (Custom 3)<br>Agency (Custom 3)<br>Agency (Custom 6)<br>Agency (Custom 6)<br>Agency (Custom 6)<br>Agency (Custom 8)<br>Agency (Custom 8)<br>Agency (Custom 10)<br>TM Reader ID<br>TM Date<br>TC Agency ID<br>TC Lane ID<br>TC Date<br>TC Time<br>TC Agency Data 2<br>Scratch Pad (custom 3)<br>Scratch Pad (custom 4)<br>Scratch Pad (custom 6)<br>Scratch Pad (custom 7)<br>Scratch Pad (custom 10)<br>TC TC Agency ID<br>TC Scratch Pad (custom 10)<br>TC TC Agency Agency (Custom 10)<br>TC TC Agency Agency (Custom 10)<br>TC TA (custom 4)<br>Scratch Pad (custom 10)<br>TC TC Agency ID<br>Scratch Pad (custom 10)<br>Scratch Pad (custom 10)<br>TC TC Agency ID<br>Scratch Pad (custom 10)<br>TC TC | <pre>P9:05:36 Type 2 Diterior FPT (0) Toll Collection (1) IAG (65) Wetropolitan Triborough Area Bridge and Tunnel Authority (8) 19:00106 (LCFE4A hex) 200 Pickup Truck (3) 2 Axles (2) &lt;= 7000 lbs. (0) Single Rear Tires (0) Private Vehicle (0) Commissioned (0) Undefined (000000000000000000000000000000000000</pre> |   |
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| READ TAG CONTENTS REPORT  |  |        |  |
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| User ID: BobMiddlemiss  |  |        |  |
| Date: 1999/03/19 Time: 09:07:24   |  |        |  |
| Taq Type<br>Application ID<br>Group ID<br>Serial Number<br>Vehicle Reference<br>Vehicle Axles<br>Vehicle Axles<br>Vehicle Meight<br>Vehicle Rear Tires<br>Revenue Type<br>Decommission<br>Mounting Location<br>Agency (Lustom 2)<br>Agency (Custom 3)<br>Agency (Custom 3)<br>Agency (Custom 3)<br>Agency (Custom 4)<br>Agency (Custom 5)<br>Agency (Custom 6)<br>Agency (Custom 9)<br>Agency (Custom 9)<br>Agency (Custom 9)<br>Agency (Custom 9)<br>Agency (Custom 9)<br>Agency (Custom 10)<br>TM Bate<br>TM Time<br>TC Agency ID<br>TC Lane ID<br>TC Plaza ID<br>TC Lane ID<br>TC Plaza ID<br>TC trime<br>F1<br>F3<br>F4<br>Scratch Pad (custom 4)<br>Scratch Pad (custom 4)<br>Scratch Pad (custom 5)<br>Scratch Pad (custom 5)<br>Scratch Pad (custom 5)<br>Scratch Pad (custom 10)<br>TC TC The Add (custom 10)<br>TC TC Axt Pad (custom 10)<br>TC Checksum | Type 2 Diterior FPT (0)<br>Toll Collection (1)<br>DAG (65)<br>Metropolitan Triborough Area Bridge and Tunnel Authority<br>1900L06 (LFF4A hex)<br>200<br>Pickup Truck (3)<br>2 Axles (2)<br><= 7000 lbs. (0)<br>Single Rear Tires (0)<br>Private Vehicle (0)<br>Commissioned (0)<br>Windsfined (0)<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>0 | (6)    |  |
| Template file: C:\TagTemplates\IAGtag.tpl   |  | Page I |  |

# Print preview of an IAG tag "Write (Program) Tag Contents"

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| WRITE TAG CONTENTS REPORT  |  |   |
|--|--|---|
| Date: 1999/03/19 Time: 0   | 9:10:58  |   |
| Tag Type<br>Application ID<br>Group ID<br>Serial Number<br>Vehicle Reference<br>Vehicle Reference<br>Vehicle Reference<br>Vehicle Rear Tires<br>Revenue Type<br>Decommission<br>Mounting Location<br>Agency (Lustom 2)<br>Agency (Lustom 3)<br>Agency (Lustom 3)<br>Agency (Lustom 5)<br>Agency (Lustom 5)<br>Agency (Lustom 7)<br>Agency (Lustom 7)<br>Agency (Lustom 9)<br>Agency (Lustom 10)<br>TM Reader ID<br>TC Date<br>TC Yate<br>TC Time<br>TC Vehicle Class<br>TC Future<br>Agency Data 2<br>Scratch Pad (Lustom 4)<br>Scratch Pad (Lustom 7)<br>Scratch Pad (Lustom 9)<br>Scratch Pad (Lustom 9)<br>Scratch Pad (Lustom 9)<br>Scratch Pad (Lustom 9)<br>Scratch Pad (Lustom 10)<br>TC TXN Number | Type 2 Diterior FPT (0)<br>Type 2 Diterior (1)<br>DAG (65)<br>Metropolitan Triborough Area Bridge and Tunnel Authority (3)<br>DSOULDS (LEFE4A hex)<br>20<br>Prickup Truck (3)<br>2 Avles (2)<br>2 = 7000 lbs. (0)<br>Single Rear Tires (0)<br>Private Vehicle (0)<br>commissioned (0)<br>windshield (0)<br>windshield (0)<br>unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unassigned<br>Unash |   |
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| WRITE TAG CONTENTS REPORT    |  |       |  |
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| User ID: BobMiddlemiss       |  |       |  |
| Date: 1999/03/19 Time: (     | 09:09:07   |       |  |
|                              |  |       |  |
| Tag_Type                     | Type 2 Interior FPT (0)  |       |  |
| Application ID               | Toll Collection (1)  |       |  |
| Group ID                     | IAG (65)<br>Material Jitan Tribury b Area Builder and Turnel Authority (6) |       |  |
| Agency III<br>Control Number | Metropolitan iniborough Area Bridge and Tunnel Authority (8)               |       |  |
| Vehicle Reference            | 200  |       |  |
| Vehicle Type                 | Pickup Truck (3)   |       |  |
| Vehicle Axles                | 2 Axles (2)  |       |  |
| Vehic]e Weight               | <= 7000 lbs. (0)   |       |  |
| Vehicle Rear Tires           | Single Rear Tires (0)  |       |  |
| Revenue Type                 | Private Vehicle (0)  |       |  |
| Mounting Location            | Windshield (0)   |       |  |
| Agency Data 1                | Undefined (000000000000000000000000000000000000                            |       |  |
| Agency (Custom 2)            | Unassigned   |       |  |
| Agencγ (Custom 3)            | Unassigned   |       |  |
| Agency (Custom 4)            | Unassigned   |       |  |
| Agency (Custom 5)            | Unassigned   |       |  |
| Agency (Custom 6)            | Unassigned   |       |  |
| Agency (Custom 8)            | Unassigned   |       |  |
| Agency (Custom 9)            | Unassigned   |       |  |
| Agency (Custom 10)           | Unassigned   |       |  |
| TM Reader ID                 |  |       |  |
| TM Date                      | Undefined (O)  |       |  |
| IM IT ME<br>TO AGANOV TO     |  |       |  |
| TC Plaza TD                  | 0  |       |  |
| TC Lane ID                   | ŏ  |       |  |
| TC Date                      | Undefined (O)  |       |  |
| TC Time                      | 00:00:00 (0)   |       |  |
| TC Vehicle Class             | 0  |       |  |
| FI FICARE                    | Undefined (D)  |       |  |
| F3                           | Undefined (0)  |       |  |
| f4                           | Undefined (0)  |       |  |
| Scratch Pad (custom 4)       | Unassigned   |       |  |
| Scratch Pad (custom 5)       | Unassigned   |       |  |
| Scratch Pad (custom 6)       | Unassigned   |       |  |
| Scratch Pad (custom 7)       | Unassigned   |       |  |
| Scratch Pad (custom 9)       | Unassigned   |       |  |
| Scratch Pad (custom 10)      | linassigned  |       |  |
| TC TXN Number                | O (O hex)  |       |  |
| TC Checksum                  | 54639 (DS6F hex)   |       |  |
|                              |  |       |  |
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