Technical Note: Configuring Custom Data Displays in xxMWD/PC™

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PLEASE NOTE

XXT tests indicate that not all qMWD/QDT/GE telemetry components with Version V02.xx firmware have the same level of functionality associated with some features. When operating xxMWD/config/PC™, and perhaps other applications, the end-user is required to understand these differences in the QDT equipment being operated...

As always, XXT strongly recommends that all system configurations, including sequence definition strings, be fully tested before using them in-service.

PLEASE NOTE

XXT uses such phrases as “QDT-compatible” in this document and XXT has attempted to provide reasonable levels of confidence that the XXT equipment is QDT-compatible within the intent and the scope of this document. However, XXT does not have any written QDT specifications from which to establish certain compatibility. ALSO, there is no guarantee that XXT components will remain compatible with future GE firmware and equipment releases.
1 OVERVIEW

In addition to the standard xxMWD information displayed by the xxDRT/PC™ and xxSAPC/PC™ applications, the user may define up to four selectable custom data displays each containing up to fourteen variables, including the display of third party data whose labels and data types may not be known ahead of time. In addition, in xxDRT/PC™ and xxSAPC/PC™ version Vb2.10b and later a general-purpose query facility is provided for cases where the data source must be periodically polled for data.

This document is divided into the following sections

Configuring Custom Data Displays
Describes the Tabbed Data Display facility and how to configure it to create custom data displays

Defining and Activating Queries
Defines the new variables associated with general-purpose queries, and how to use them.
2 CONFIGURING CUSTOM DATA DISPLAYS

The main screen of xxDRT/PC™ and xxSAPC/PC™ is divided up into several distinct panes. One of these, located just below the depth display, consists of 14 lines of column-aligned variables predefined by XXT.

A facility has been added for the user to redefine this area of the screen allowing up to 4 custom screens identified at the bottom by tabs. The user may switch the display by clicking on the desired tab.
To enable the custom tabbed data display, use the Setup>Data Tabs menu item and check the “Enable Tabbed Data Display” checkbox.

When the tabbed data display is enabled, the user will be taken to the Setup Data Tabs dialog automatically. By default, the first tab will be enabled and configured to match the standard XXT display and the other three tabs will be disabled and defined as all blank lines. Each tab may be enabled and named. If a tab defined as all blank is enabled, the user will be given the option of defining it to match the first tab. The user may then configure the tab by clicking on the configure button.

The “Configure” button will display the Configure Tab dialog for the tab. This dialog allows the user to define each of the 14 available display lines as either blank, containing a variable, or containing a special “compact” quality/confidence/decode value. In addition, lines may be designated as double height, in which case a larger font is used.
To add a new variable to the display, the user chooses a line, sets the type to “Variable” and enters the variable’s label in the field. The user may then define a display label for the variable and, if the units label for the variable is not already defined by XXT, the user may enter a units label as well.

If the variable label is not already defined by XXT and it is not in the list of virtual variables already defined, a new virtual variable will be created and the user will be prompted to define the variable’s data type.
The font used for displaying the tabbed data may be modified using the **Setup Fonts** dialog. In addition, the widths of the columns used to format the data may be adjusted by using the “**Setup>Data Field Proportions**” menu item to open the “**Data Field Proportions**” dialog window. When this dialog is visible, dotted blue guidelines will appear on the display showing the current column positions. By modifying the values in the **Data Field Proportions** dialog and clicking the “**Apply**” button the user may tweak the display to accommodate long display labels or units abbreviations, especially when using the double height font.

These same data field proportions are also applied to the standard display if the tabbed data display is disabled.
3 DEFINING AND ACTIVATING QUERIES

In xxDRT/PC™ and xxSAPC/PC™ version Vb2.10b and later there are four general-purpose query format strings, “gpFmt0”, “gpFmt1”, “gpFmt2” and “gpFmt3”. Each string has a maximum length of 250 characters.

**Note:** Although these are referred to here as “query” strings, they may contain ANY string and are not limited to queries. No validity checking is performed on the string contents, so syntactically incorrect queries will be sent as defined. **It is the responsibility of the user to ensure the validity and safety of any general-purpose query strings!**

Associated with each query format string is a query interval “gpInt0”, “gpInt1”, “gpInt2” and “gpInt3”, in units of seconds, with an allowable range of 1 - 255. Defining an interval of zero indicates that the associated query is inactive and will not be sent.

Also associated with each query format string is a query target node “gpNode0”, “gpNode1”, “gpNode2” and “gpNode3” defining the target node for the query. The target node MUST be exactly 6 characters, consisting of a 4 character label and two character address, and is case-sensitive. Wild-card and broadcast characters are allowed. However, all-node broadcasts (****##) should NOT be used when more than one PC running xxDRT/PC™ or xxSAPC/PC™ is present on the network, because the other PCs may respond to the query and possibly interfere with data from the desired node.

**Example 1**

```
gpFmt0="RxFBw1Hz?"
gpInt0=10
gpNode="MPRx05"
```

**Example 2**

```
gpFmt2="ekV?, ekR?;ekTemp? ekAcq!"
gpInt0=60
gpNode="ekXL##"
```

In example 1, the MPRx05 will be queried for RxFBw1Hz every 10 seconds, and in example 2 a broadcast query for the third-party data values ekV, ekR and ekTemp residing in an “ekXL” node will be made every minute, along with a command.

Queries are activated by placing their definitions in a text file named “tmPC_Init.txt” located in the folder “C:\xxMWD\UserData”. When xxDRT/PC™ or xxSAPC/PC™ initializes, it checks to see if this file exists. If so, then the contents are read and the appropriate general-purpose queries are activated.

**NOTE** It is the user's responsibility to ensure the correctness of the contents of the tmPC_Init file. In particular, defining data values other than those associated with general-purpose queries in this file may have undesirable side effects!
REVISIONS…

Draft #1 (PJN/XXT/22FEB2011)...
Initial draft

Draft #2: (PJN/XXT/24FEB2011)...
Reorganized document order, added more detail to general-purpose query section.
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