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ASE2000 Harris 5000/6000 Protocol Technical Note

Data Dump and Status Dump

To ensure that the ASE2000 correctly transmits requests and processes responses from Harris 5000/6000 Data Dump and Status Dump exchanges, you must modify the corresponding exchange definitions to match the I/O port configuration of the RTU.

Note: *A Data Dump request reads all analog and pulse accumulator ports. A Status Dump request reads status (digital) ports.*

You need to know the following before modifying the exchange definitions for the Data Dump and Status Dump exchange templates:

- The number of *applicable data ports* contained in the RTU. For Data Dump, the total number of analog and pulse accumulator input ports. For Status Dump, the total number of Status input ports.

- For each port, the type and number of points to request

To modify the Data Dump or Status Dump exchange definition to correctly request and display data, use the following procedure.

1. Righ-click the Data Dump or Status Dump exchange template in the Exchange List view
2. Select Edit Exchange Definition. The Edit Exchange Definition dialog box appears.
3. Under the list labeled "To RTU," select the line labeled "Data: 0 words" and click Remove.

For each *applicable data port*:

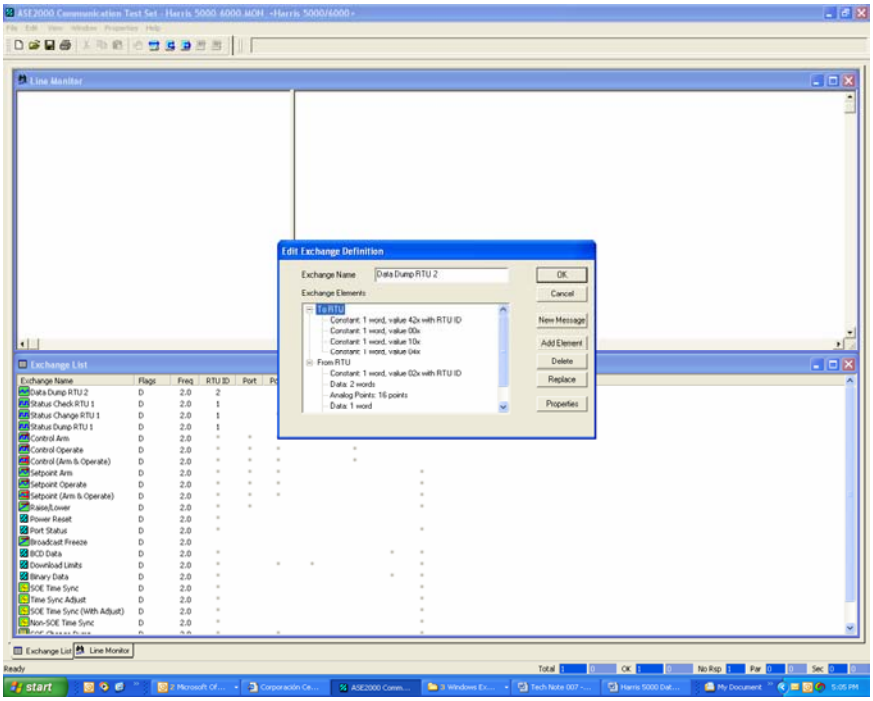
- Select the last element under "To RTU".

- Click Add Element. The Add Message Element dialog box appears.

- Select Constant from the list of element types and click OK. The Message Element Properties dialog box appears.

- Enter the number of points to request from the port into the Value field and click OK.

When you are done in the "To RTU" section, there should be one Constant message element for each *applicable data port* at the RTU. This is the definition of the message that will be sent to the RTU when this exchange is selected. In the following screen shot, the Data Dump exchange has been edited to request 16 Analog points from Port 1 and 4 Analog Points from Port 2. Next, the exchange definition will be edited to define the RTU response message.



The Data Dump or Status Dump “From RTU” section must now be edited to define the contents of the RTU response message. The default element list contains two entries for each of 7 possible ports; one entry for point type and number of points or blocks and one entry for Port Status. For each port request defined in the "To RTU" section, you must define a corresponding 2-line entry in the “From RTU” section.

Data Dump:

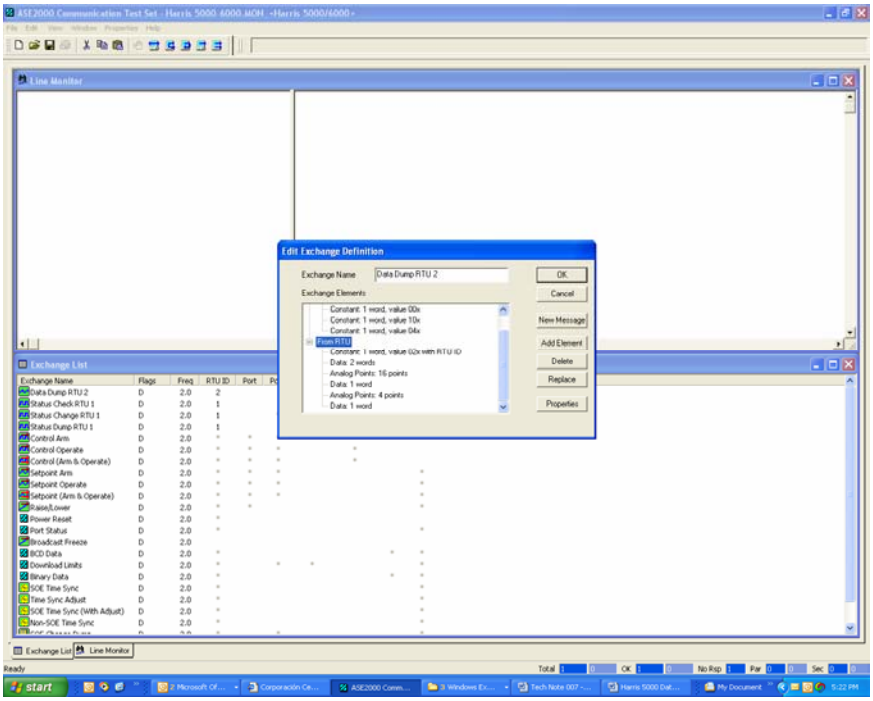
- Select the first Point Data element and click Replace.
- Select Analog or Pulse from the list of element types (as appropriate) and click OK.
- When the Message Element Properties dialog box appears enter the number of points of the selected type into the Repeat Count field and click OK.
- Repeat this procedure for each port from which data is being requested as defined in the “From RTU” section

Status Dump:

- Select the first Digital Points element and click Properties.
- In the Repeat Count field, enter the number of points divided by 6 and rounded to the next whole number, and click OK.
- Repeat this procedure for each port from which data is being requested as defined in the “From RTU” section

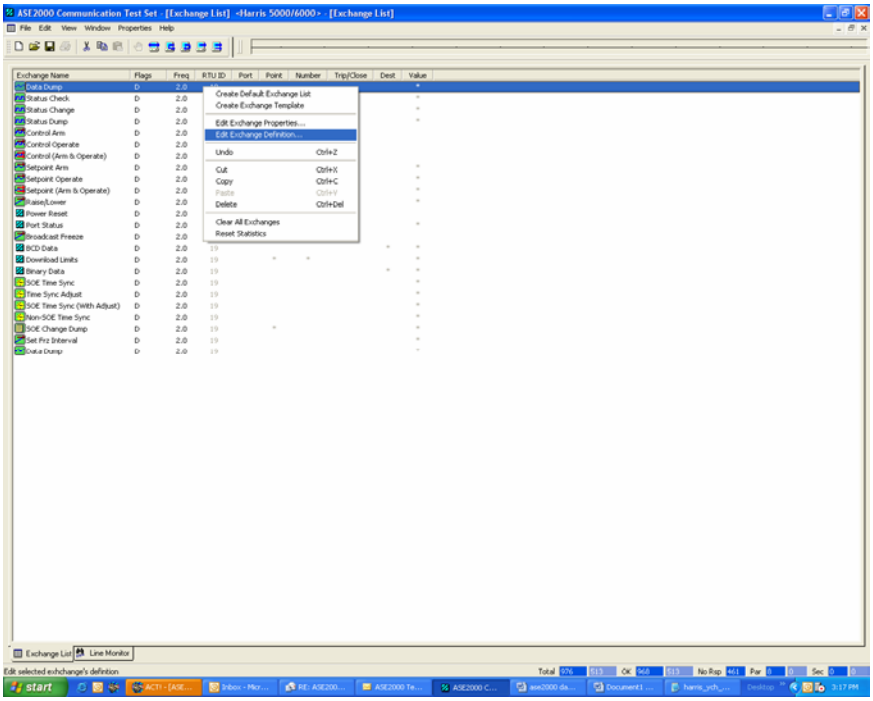
If less than 7 ports are used, delete the unused elements in the “From RTU” element list. Be careful to not delete the “Data: 1 word” element immediately after the final Analog, Pulse, or Status element as this is a place holder definition for the Port Status byte. Unused elements are removed by selecting the unused element and and then selecting the “Delete” button. This step is necessary only in RTU simulation mode.

In the following screen shot, the Data Dump exchange has been edited to request 16 Analog points from Port 1 and 4 Analog Points from Port 2.



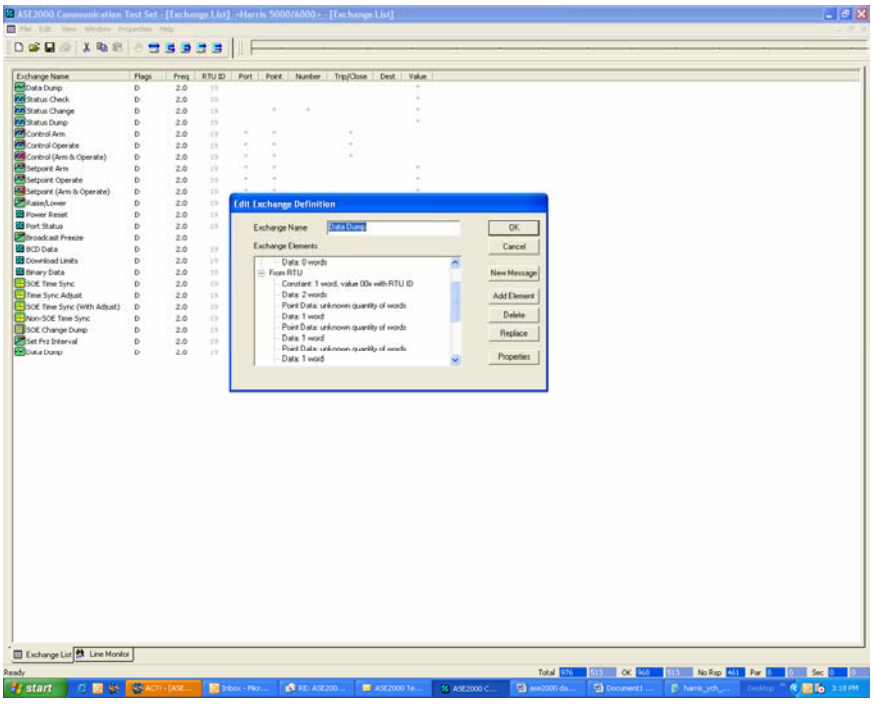
The following example illustrates how to edit the Data Dump exchange to process an RTU response from 1 port with 52 analogs.

On the Exchange List view, right-click on the Data Dump exchange name and select Edit Exchange Definition.



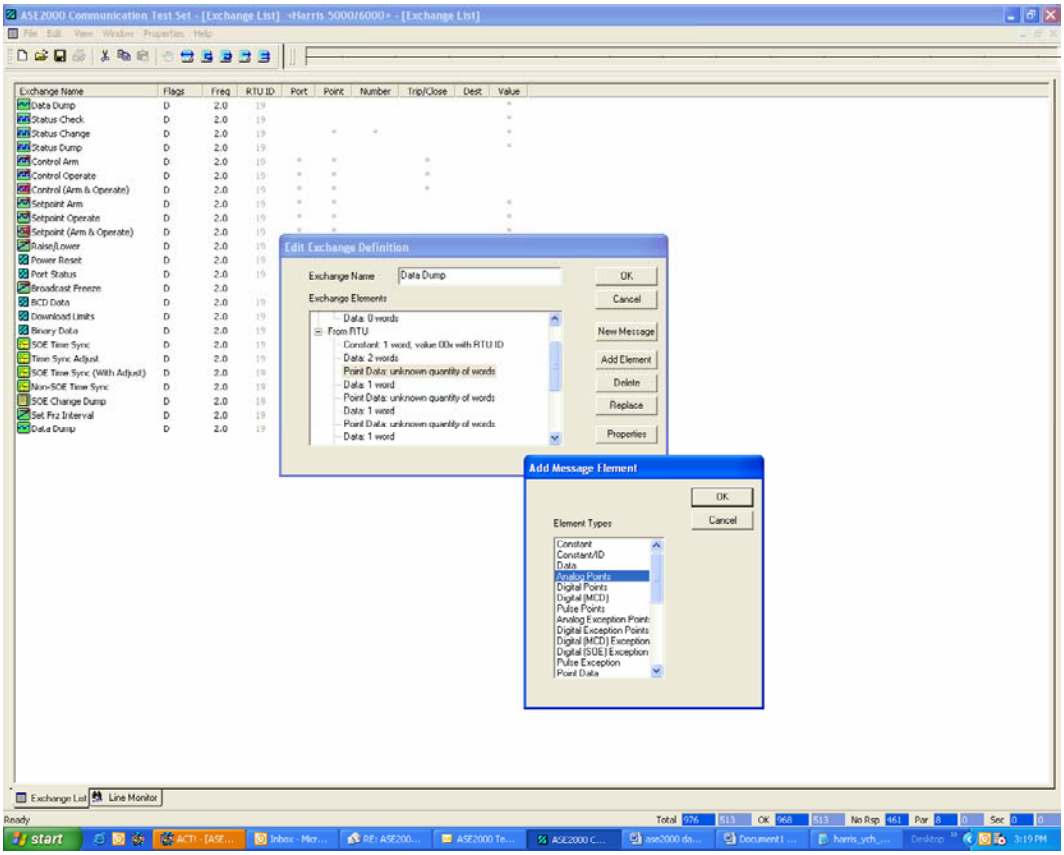
The default “From RTU” exchange definition for Harris 5000/6000 is defined for:

- RTU ID
- RTU Status (2-bytes)
- Point Data: unknown quantity of words (Port 0)
- Port 0 Status
- Point Data: unknown quantity of words (Port 1)
- Port 1 Status
- Point Data: unknown quantity of words (Port 2)
- Port 2 Status
    -
    -
    -
- Point Data: unknown quantity of words (Port 7)
- Port 7 Status

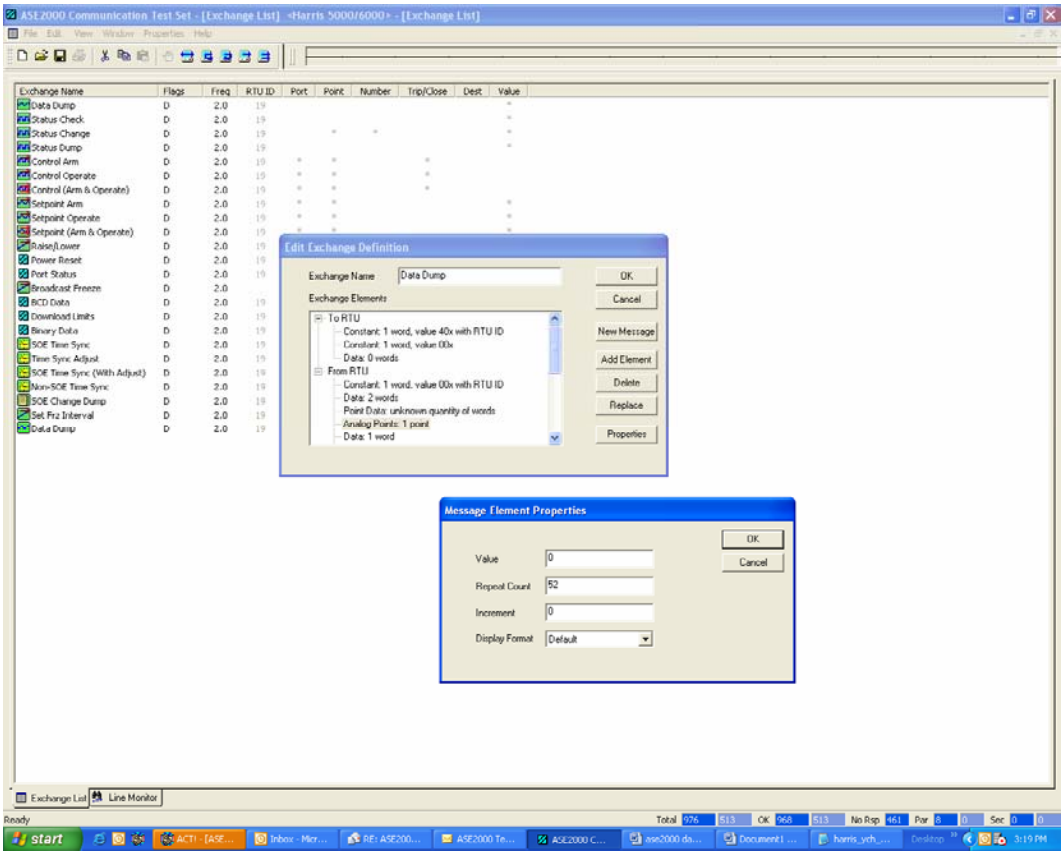


There are 2 entries for each possible port; the first is data type and count and the second is Port Status. This structure must be edited to define the actual message structure returned by the RTU.

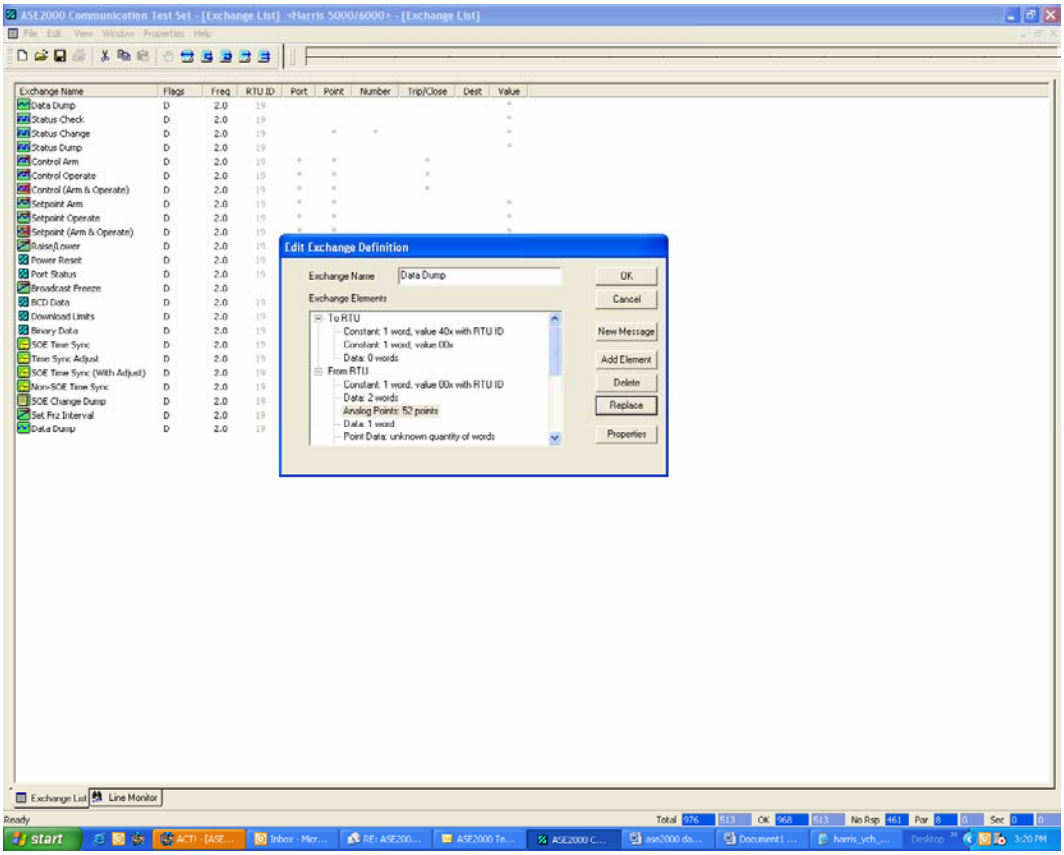
Select (left-click) the line for “Point Data” for Port 0 then select the “Replace” button. This will cause the “Add Message Element” display to appear. Select the Analog Points entry.



Next, Select the Properties button and enter “52” in the Repeat Count field and Select OK. This defines the number of expected points for that port as 52.

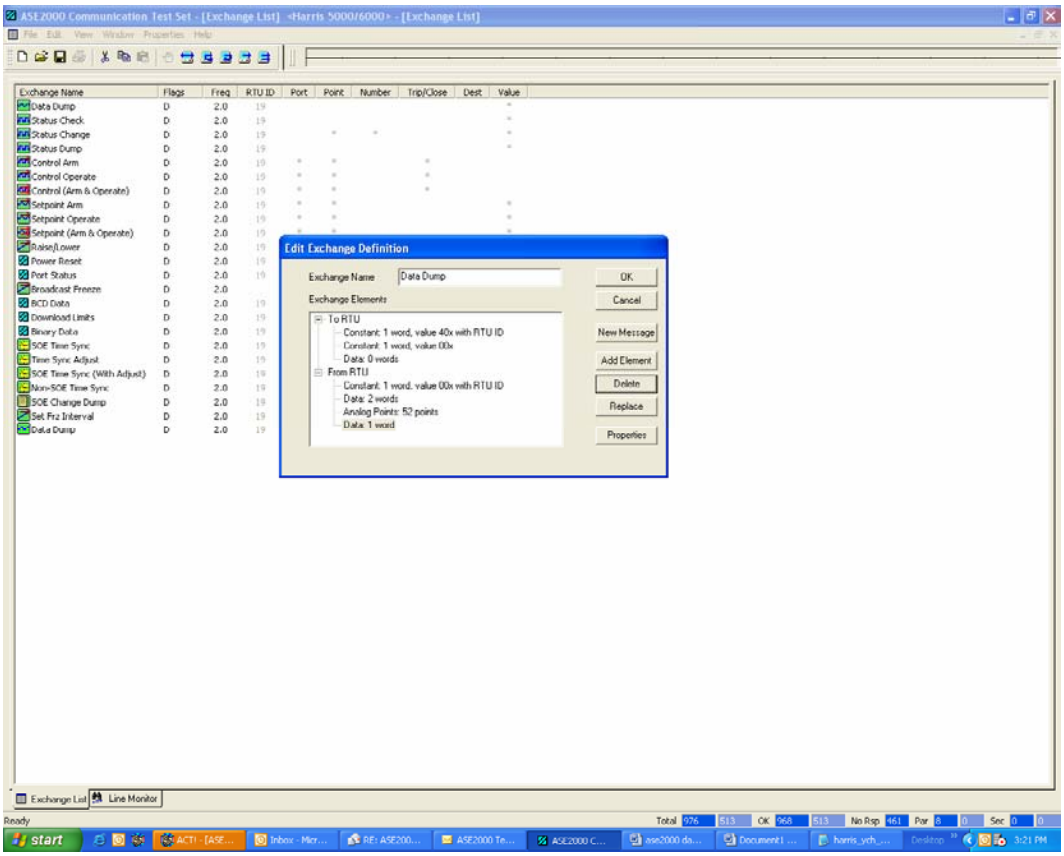


The Exchange Definition for Data Dump should now look like the following picture.



The last step in the editing process is to delete the message structure entries that are not required. That is, delete the 2-line entries for unused ports so that the Data Dump Exchange Definition looks like the following picture. The easiest and safest way to delete unused entries is to scroll down to the bottom of the list and use the Delete button to delete unused entries.

When done editing, Select the OK button.



The following example illustrates the Line Monitor display for a Status Check request every 2 seconds and a Data Dump request every 6 seconds where the RTU responds with 52 Analog points from Port 0.