Configuring MIU Process Parameters

This application note describes how to manually map physical MIU inputs to "logical" MIU signals. This is often referred to as the "PP" number by ProHelp® Millennium users.

This application note is intended for Mattec personnel or extremely advanced users only.

1. Overview

When configuring the process parameters for an MIU on ProHelp® EPM, you may only use the first 20 (or 32) "physical inputs" that are encountered. There is no way to set the "PP" (process parameter) field to a value of 1-20 (or 1-32) as you can in the Machine Configuration program in ProHelp® Millennium.

2. Detailed Analysis

When talking about MIU or IMAC configuration, two database tables are especially important: **`MachInput`** and **`MachParm`**.

The logical signal number (**`LogicalSigNo`**) is the equivalent of the PP field in ProHelp® Millennium. This value is determined by the view **`vMiuSignals`** and it is computed as **`MachInput.OrderNo`** + 1.

In other words, **`MachInput.OrderNo`** is used to calculate the equivalent of a PP value. This value is then referenced by a number of monitoring engine-related programs, including the **`ACNF`** and **`XPP_STS`** (**`STS_32`**) messages. It's primary function is to translate physical/logical MIU input mappings into a **`ParmNo`** field.

The problem with today's system is that the **`MachInput.OrderNo`** field is set by the Machine Configuration program and can not be easily modified by the user. Each time the user adds an AIU to the MIU, the related input fields are automatically populated and assigned a sequential **`MachInput.OrderNo`** number.

Consider the following example. The user has added 3 AIUs to the MIU. The **`MachInput`** table will then look like the following:

AIU (*)	Address(*)	OrderNo	Description
0	0	0	Cycle time for AIU0.
0	1	1	Digital Pulse 1.
0	2	2	Digital Pulse 2, digital counter.
0	3	3	Digital Pulse 3, digital counter.
0	4	4	Digital Pulse 4, digital counter.
0	5	5	Analog 1.

AIU (*)	Address(*)	OrderNo	Description
0	6	6	Analog 2.
0	7	7	Analog 3.
0	8	8	Analog 4.
0	9	9	Analog 5.
0	10	10	Analog 6.
0	11	11	Analog 7.
0	12	12	Analog 8.
1	1	13	Digital Pulse 1.
1	2	14	Digital Pulse 2.
1	3	15	Digital Pulse 3.
1	4	16	Digital Pulse 4.
1	5	17	Analog 1.
1	6	18	Analog 2.
1	**7**	**19**	**Analog 3. The last signal that can be monitored in a standard MIU by default.**
1	8	20	Analog 4.
1	9	21	Analog 5.
1	10	22	Analog 6.
1	11	23	Analog 7.
1	12	24	Analog 8.
2	1	25	Digital Pulse 1.
2	2	26	Digital Pulse 2.
2	3	27	Digital Pulse 3.
2	4	28	Digital Pulse 4.
2	5	29	Analog 1.
2	6	30	Analog 2.
2	**7**	**31**	**Analog 3. The last signal that can be monitored in an STS_32 MIU by default.**
2	8	32	Analog 4.
2	9	33	Analog 5.
2	10	34	Analog 6.
2	11	35	Analog 7.
2	12	36	Analog 8.

(*) – AIU and Address are not stored individually in the **`MachInput`** table. Rather, the field **`Address`** is used to store both values. AIU is calculated as **`MachInput.Address`** / 16 and Address is calculated as **`MachInput.Address`** % 16.

3. Manually Configuring the MIU's Inputs

To manually configure the MIU's inputs to allow the physical inputs to appear in a different logical order, follow these steps:

- Edit the **`MachInput`** table for the desired machine.
- Manually set the value of **`MachInput.OrderNo`** to mimic the functionality of the PP column in ProHelp® Millennium.

Keep in mind that **`MachInput.OrderNo`** is a zero-based number. That is, valid OrderNo's that can appear at the machine include 0-19 (standard MIU) or 0-31 (**`STS_32`** MIU).

You must ensure that the Cycle Time field on AIU0 has an **`OrderNo`** of 0.