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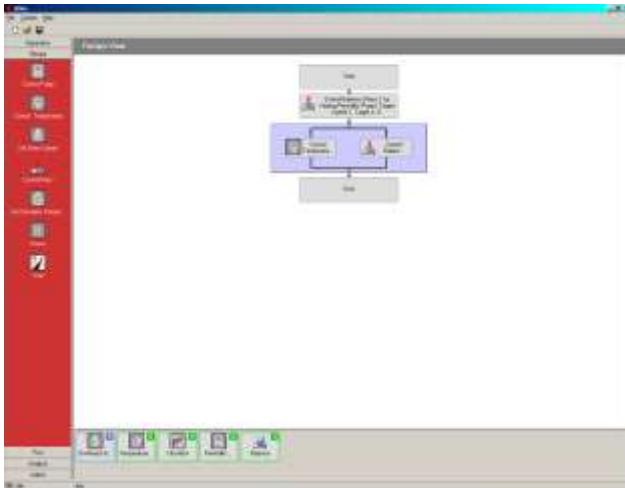
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<b>System/Product</b>	Atlas
<b>Model/Module</b>	All
<b>Subject Type</b>	PC Software
<b>Subject Version</b>	1.0
<b>Author</b>	SV
<b>Date</b>	17/04/2008

## Technical Note – Altering PID Values in Atlas Software

### 1 Changing the PID for specific steps

1. In the atlas software, go the recipe window.

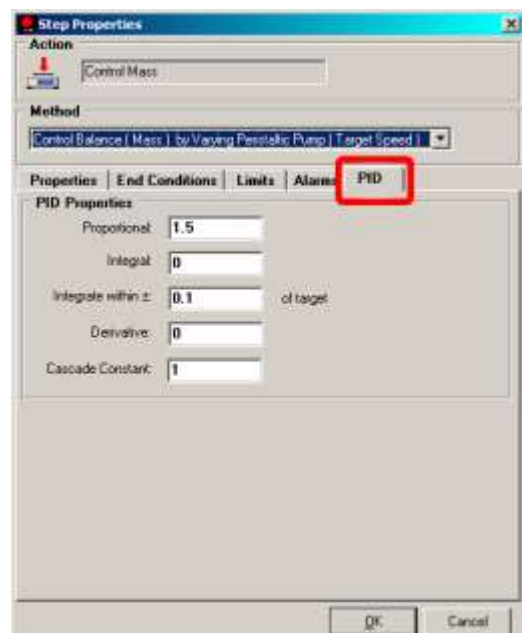


Drag and drop an action onto the recipe to open up the step properties window.

If the step is already present, double click it to open the step properties window.

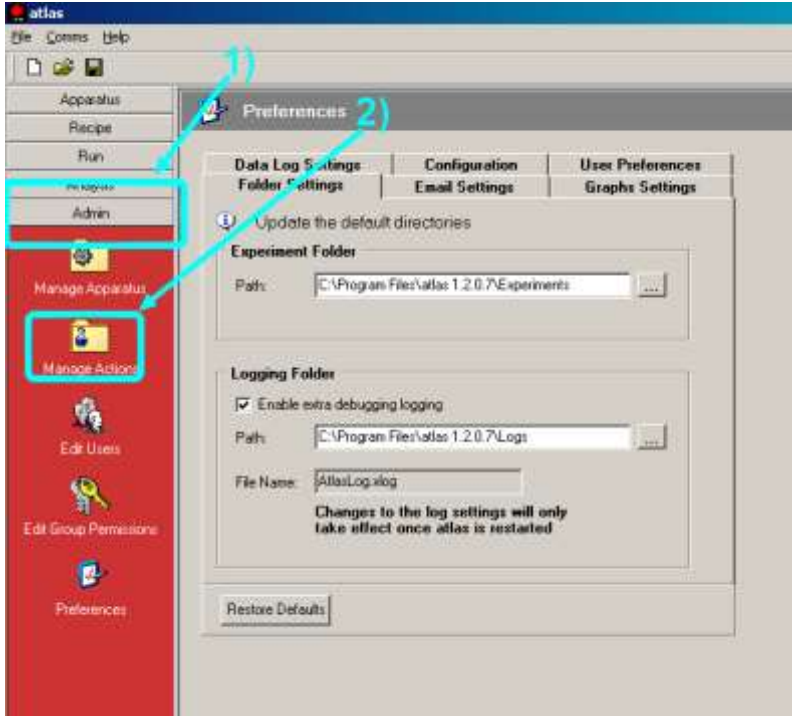
The step properties that use a PID control loop will have a PID user editable tab.

2. Click on the PID tab to access these values. The values contain in these boxes are the default PID values. If you change these values, you change the control properties FOR THAT STEP ONLY. Any other steps in the recipe will have their own default values and may need to be changed as well to suit the recipes needs.



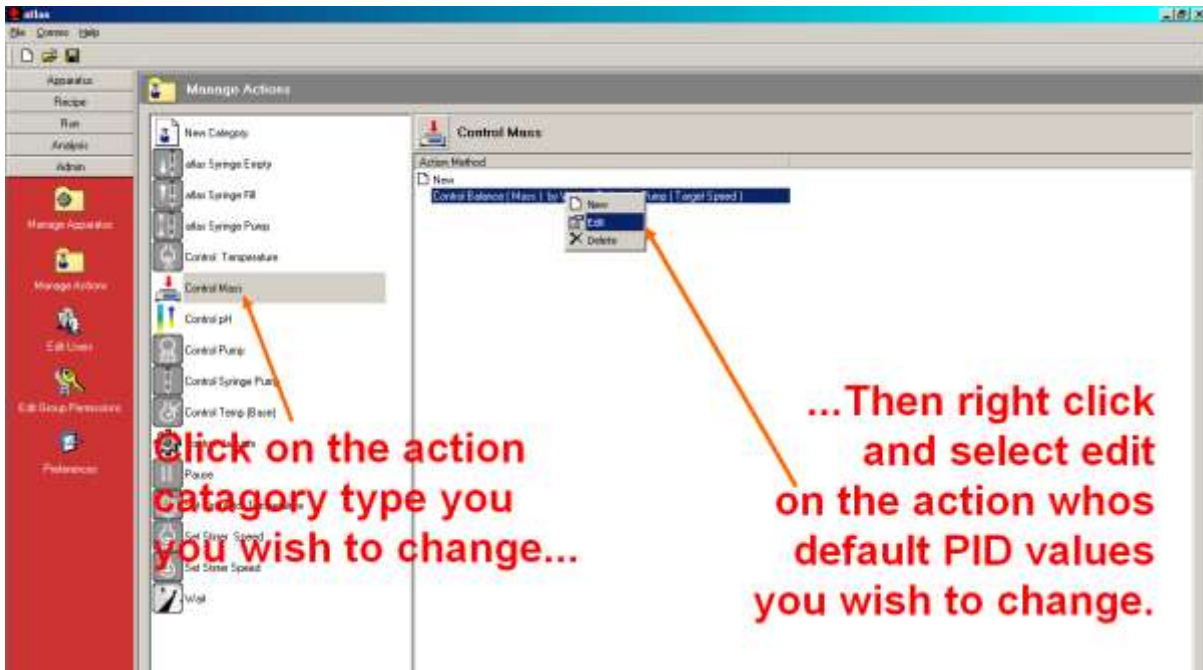
## 2 Changing the default PID for an Action.

Changing the default PID for an action will mean the chosen PIDs will be automatically selected when an action is used in a recipe file.

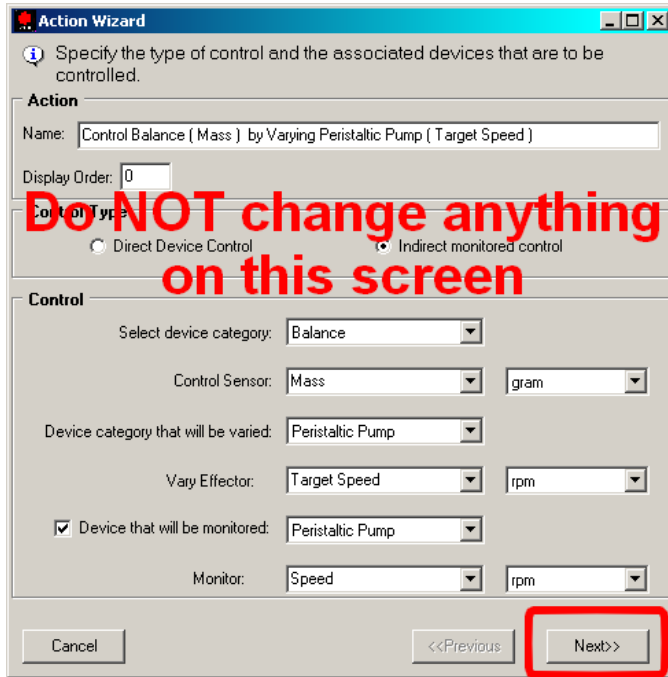


1. Firstly, click on the admin tab and then click on the manage actions to access all available actions.

2.

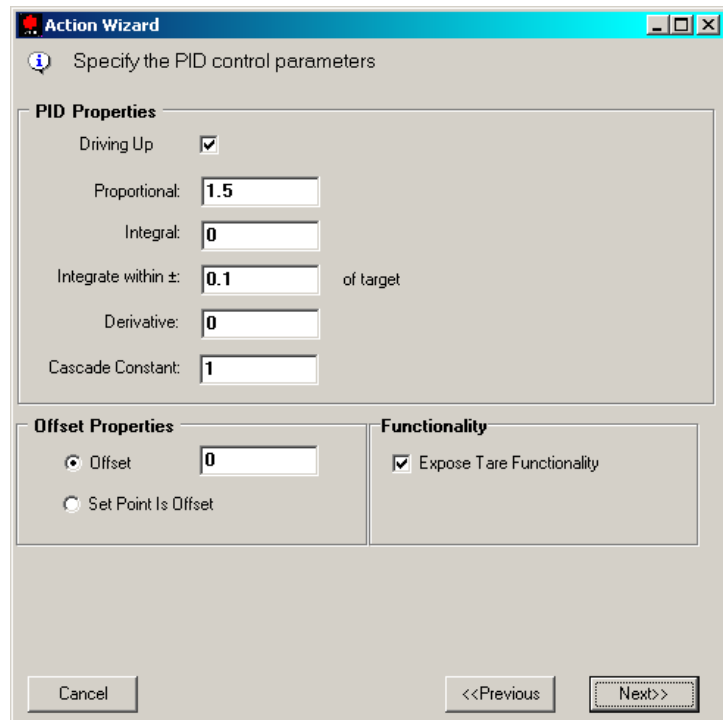


- The action wizard should start up when you click the select the edit option. Do NOT change any of the values on the first window. Click next to move onto the next screen.



- In this screen, you can enter proportional, integral and derivative values that will become the default every time an action is used in the recipe window.

Make note of the original values before you make any changes. The changes made here will have a direct influence in the way the hardware involved in this action will behave. Make note of any subsequent changes that are made. That way, should a set of parameters fail to deliver the correct behaviour, the previous values can inputted carry on tuning.



Once finished, click next and next again to finish the wizard and save the values.

### 3 Basic Tuning Tips

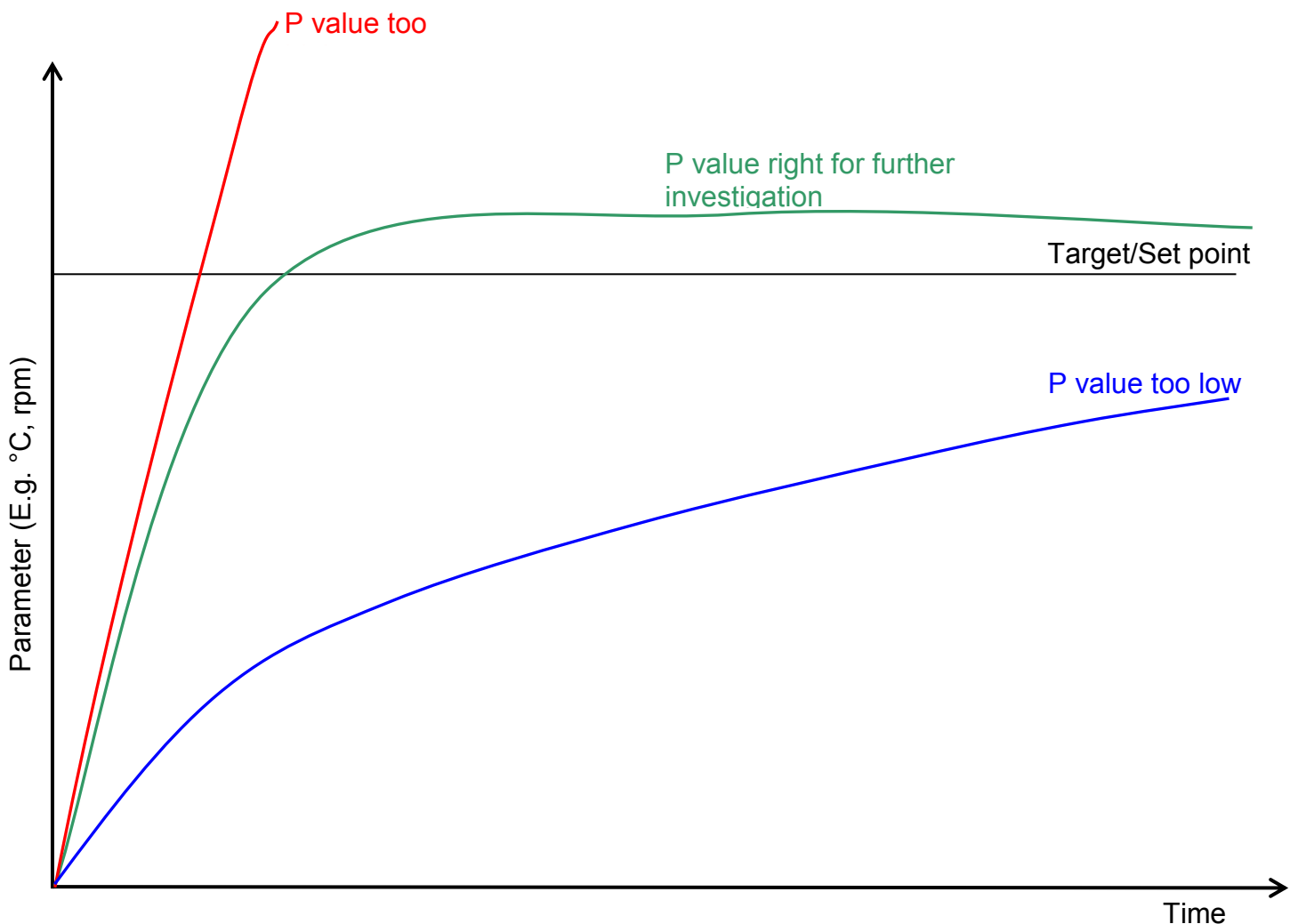
If you type the words 'PID tuning' into an Internet search engine, you will find a plethora of website with advise and software on how to obtain the perfect proportion, integral and derivative values for your given control loop. Here is a very basic method for tuning a system from first principals. In the example given below, temperature control is the loop.

#### Proportional Value

Start with no proportional, integral or derivative values at all and enter a value for P. Write a very simple recipe which involves going to and maintaining a temperature e.g 10 - 20°C above room temperature.

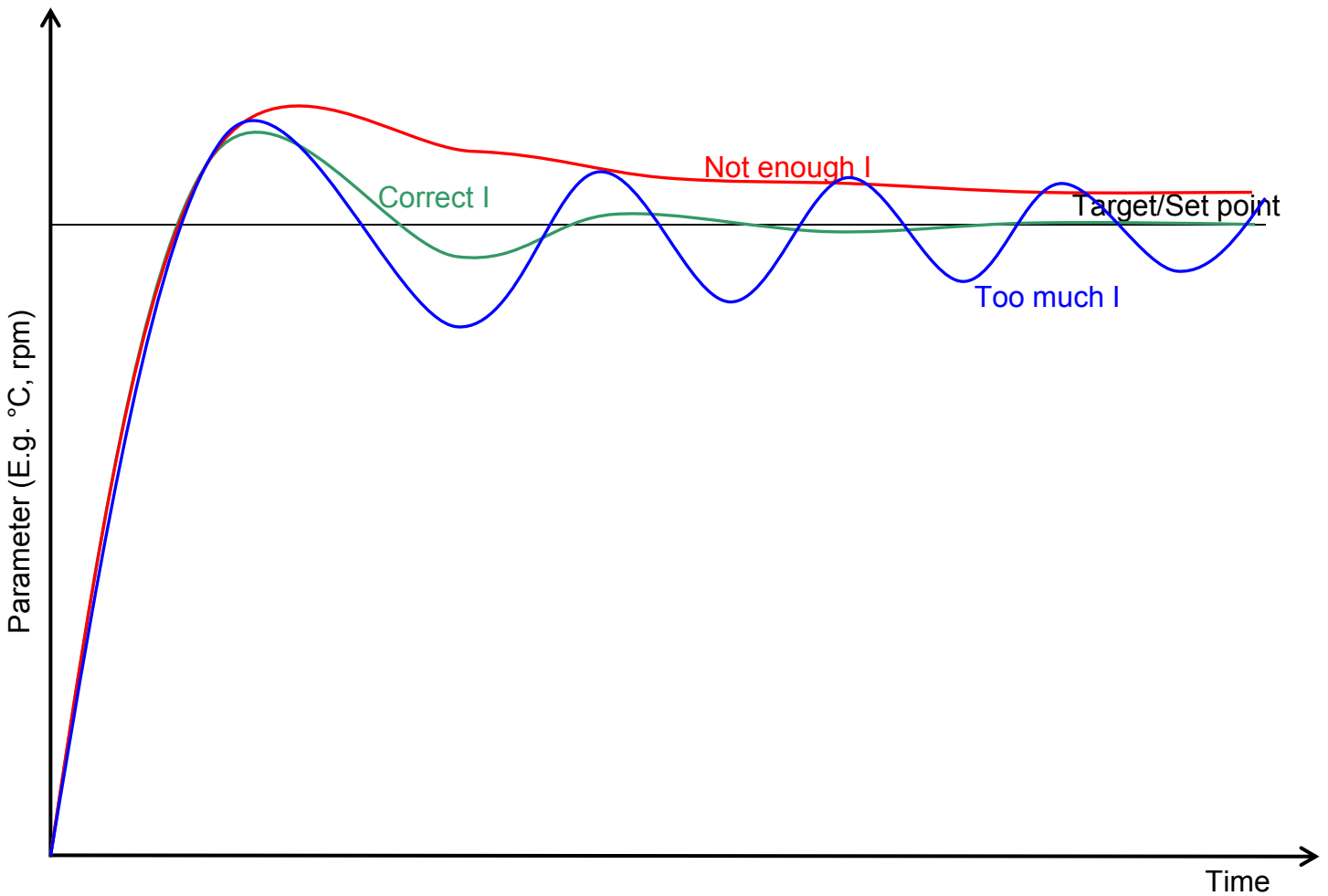
Start by choosing a P value (e.g. 2) and see what effect that has on the profile. If P is too low, increase it and try the same step again. Do the reverse if the P value is too high and there is a massive overshoot.

Once you've got the correct level of overshoot, deduct 10% from you P value and move onto tuning the integral value.



### Integral Value

With your P value in place from the previous section, start increasing the I value to see what effect it has on the temperature profile. Increase or decrease the I value until the profile reaches the target /set point in the quickest time possible, with the minimum of overshoot and the minimum of oscillation. In most cases, oscillation will be negligible and no further tuning would be necessary.



### Derivative

If the degree of oscillation is not suitable for your needs, start applying small quantities of D value. The D value should be used with caution as small changes can lead to very large effects to your control loop.