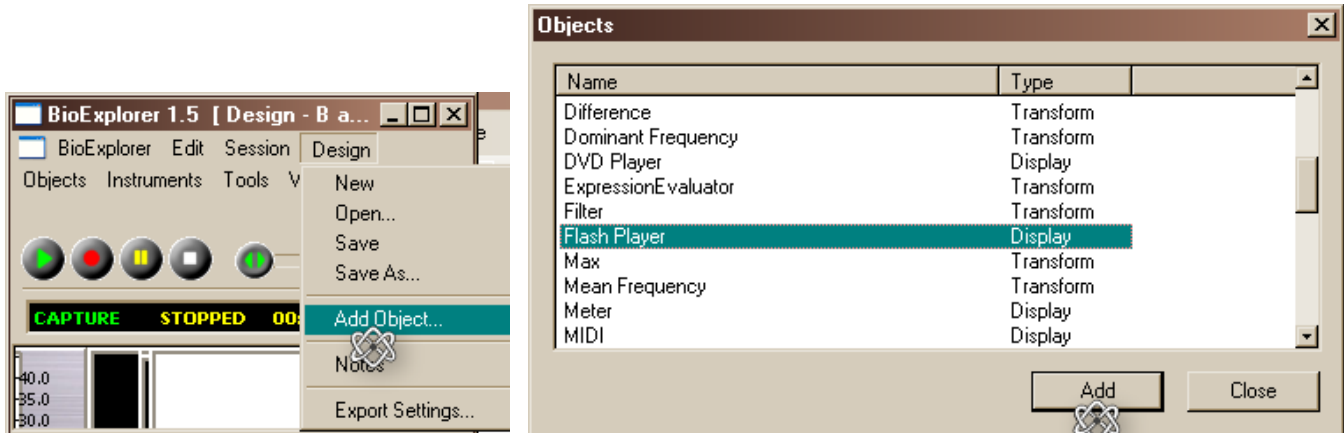




BioPLAY™ Adapting BioExplorer Designs

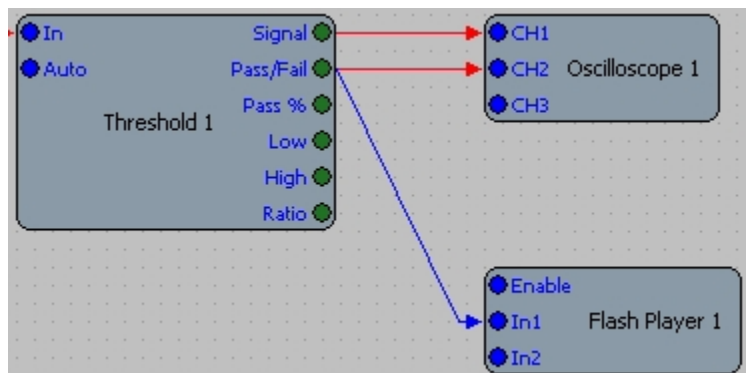
This is the process of adapting a standard design into a BioPLAY-able design. Add a flash player if not already included in the design:

In the "Design" menu, choose Add Object, then Flash Player.



The BioPLAY flash player requires three inputs (Bio1, 2, 3). Each one controls a different function of the game. Your BioExplorer design has to be modified to provide these three inputs.

In1 controls the most basic game function (shoot, go, etc.) and will normally be the Pass/Fail signal from your threshold.



In2 controls an additional function that adds power to the basic (bonus points, special weapons, etc.). It should be triggered when some criterion beyond the basic training requirement has been met. There are a number of ways to do this, depending on your particular design.

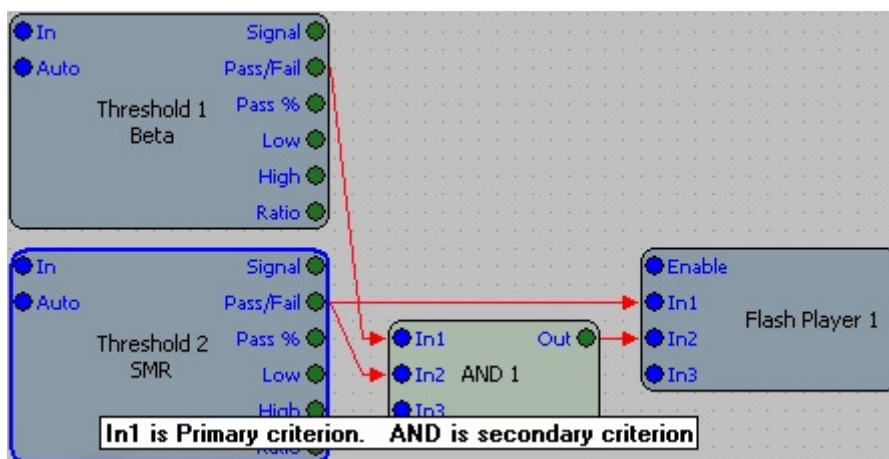
You could use a second Threshold object,



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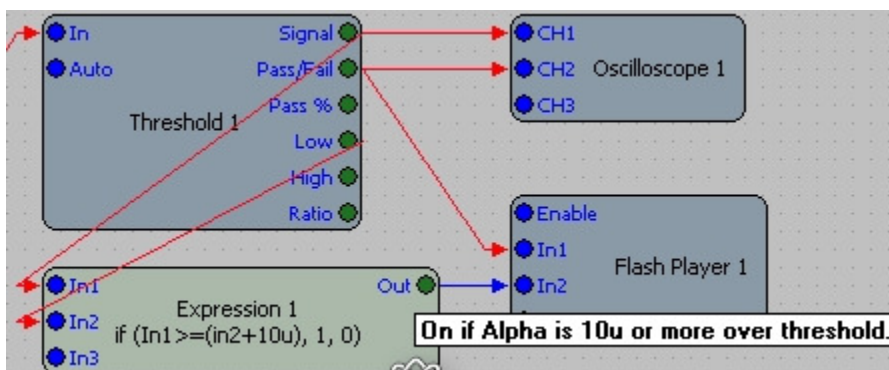


an AND object,



or anything you want feeding into the Pass/Fail condition.

We can make In2 more difficult than the standard Pass/Fail. In this hypothetical example we add an Expression Evaluator. Connect the Threshold's Signal to In1 on the Expression Evaluator. Connect the threshold, "Low" on the Threshold object, to In 2 so the signal has to be somewhat higher than just threshold. In Expression 1, write your expression [e.g. $If(In1 \geq (In2 + 10u), 1, 0)$].

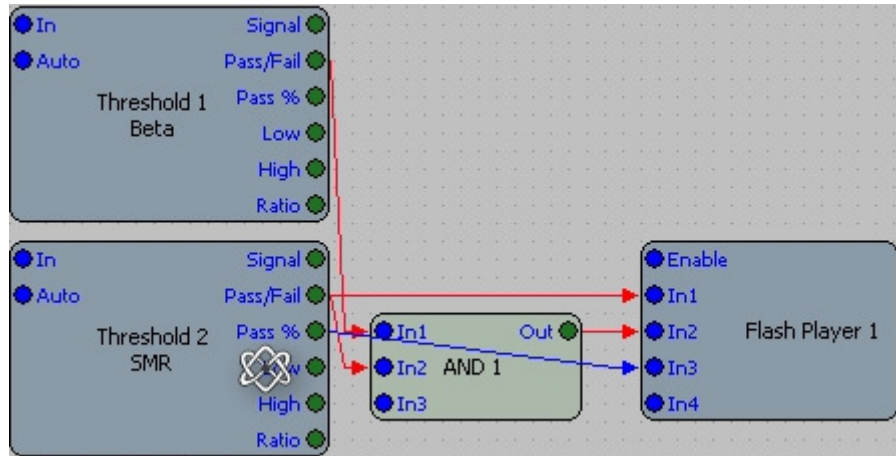




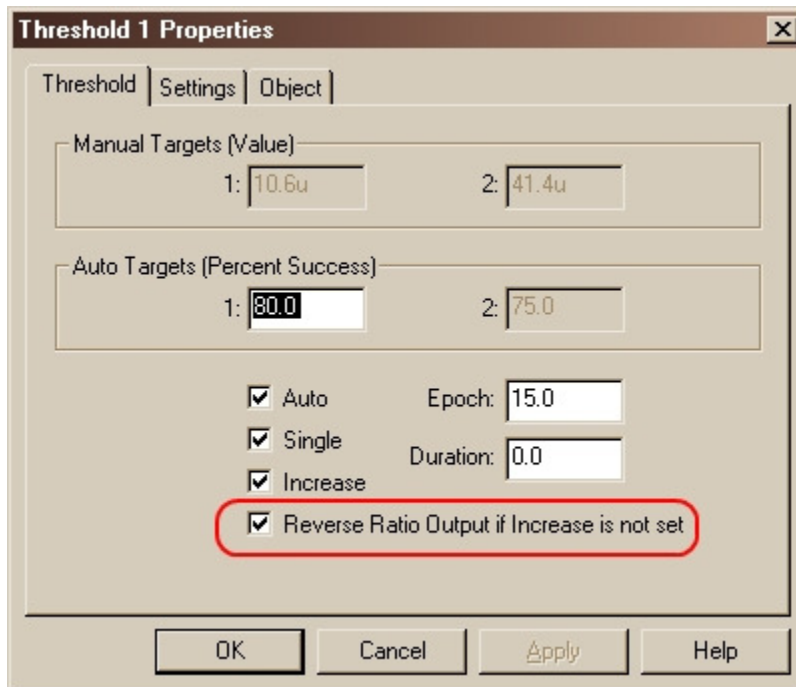
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What this is saying in language terms is, "If the signal is greater than or equal to the threshold plus 10 microvolts, Bio2 is On. That way we've created a slightly more challenging situation from which a trainee may earn bonus points. Adjust the microvolts value depending on your design/training.

In 3- The third variable in all BioPLAY designs is not Pass/Fail, it is variable. It goes from zero to one. Pass% may work well, though it will have little variation over the training period..



We use the Ratio output. There are two things to do to normalize it. First, in the Threshold object's Properties, check "Reverse Ratio Output if Increase is not set."

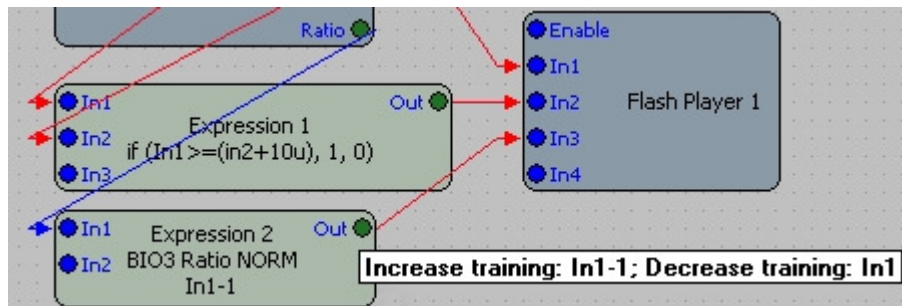


Next, add another Expression Evaluator. We have to normalize the ratio (in Expression 2 below) because in BioExplorer when downtraining-if you are not increasing-the ratio goes from 0-1. If

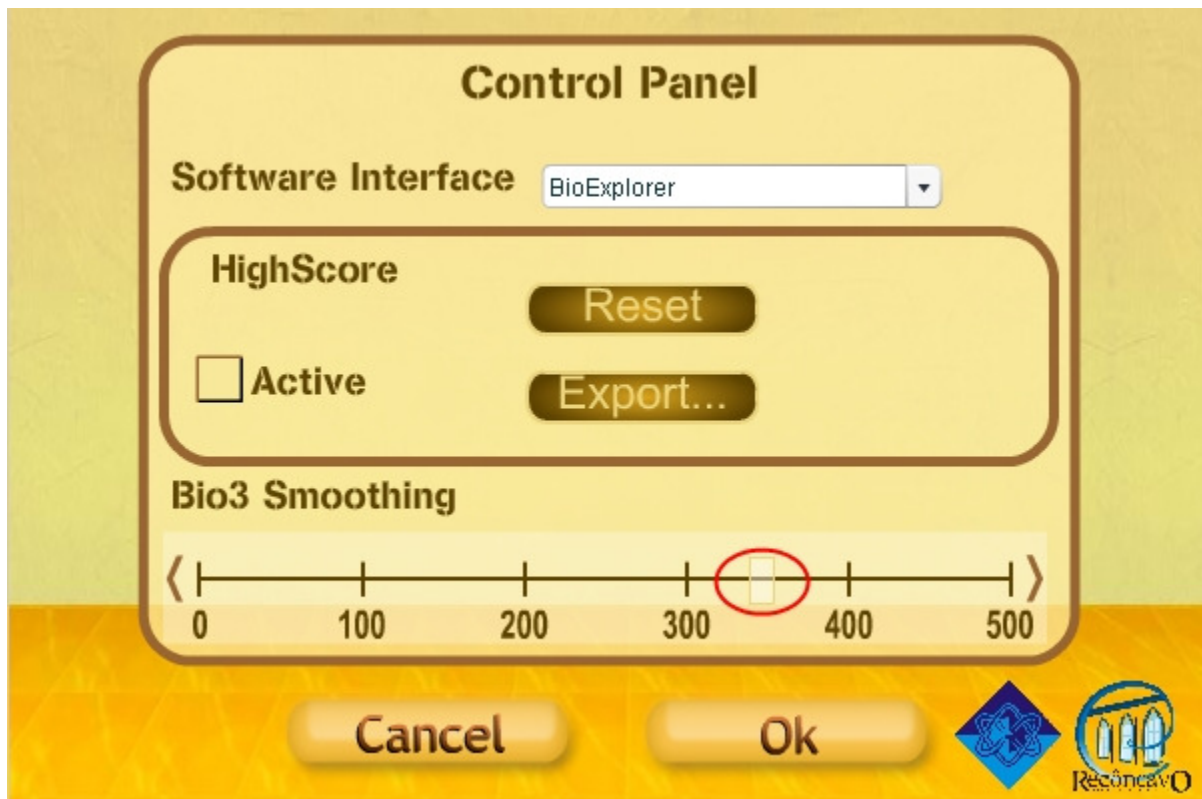


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increasing, it goes from 1-2. For Increase training write this statement: $In1-1$. That is ratio minus 1 to take it to the zero level. When not doing Increase training, change the expression to simply $In1$.



The BioPLAY Control Panel includes an average slider for smoothing feedback. Set this up to 500ms averaging as desired.



Now your design will play with any of the BioPLAY™ games.