# NeuroShell Trader

Ehlers' Median-Average Adaptive Filter can be easily implemented in the NeuroShell Trader by using the NeuroShell Trader's ability to call functions written in industry standard languages.  Although most indicators can easily be built with our point and click Indicator Wizard, more complicated ones may be written in C, C++, Basic, and Pascal.  We've created the Median-Average Adaptive Filter in Basic for this tip:

```
Dim i&, Length&
Dim alpha#, FiltPrev#, Value1#, Value2#, Value2prev#, Value3#
Dim Smooth() As Double


  ReDim Smooth(0 To cnt-1)  'Create intermediate arrays
  ReDim sortarray(0 To MAXLENGTH-1) As Double

  For i = 3 To cnt - 1
    Smooth(i) = (@Price[i] + 2 * @Price[i-1] + 2 * @Price[i-2] + @Price[i-3]) / 6
    Length = MAXLENGTH '39
    Value3 = .2
    If i >= Length + 2 Then
      'First good bar requires some initialization of previous values
      If i = Length + 2 Then FiltPrev = Smooth(i-1): Value2prev = Smooth(i-1)
      While Value3 > Threshold
        alpha = 2 / (Length + 1)
        Value1 = Median(Smooth(), i, Length)
        Value2 = alpha * Smooth(i) + (1 - alpha) * Value2prev
        If Value1 <> 0 Then Value3 = Abs(Value1 - Value2) / Value1
        Length = Length - 2
      Wend
      If Length < 3 Then Length = 3
      alpha = 2 / (Length + 1)
      @Filt[i] = alpha * Smooth(i) + (1 - alpha) * FiltPrev
      FiltPrev = @Filt[i]
      Value2prev = Value2
    End If
  Next

  Erase Smooth  'Delete arrays
  Erase sortarray
```

For more information on the NeuroShell Trader visit www.NeuroShell.com.

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