Comparator - internal_reference

Example Code

```
/*************************************************************************|
| AVR DA/DB analog comparator library                                     |
|                                                                         |
| Internal_reference.ino                                                  |
|                                                                         |
| A library for interfacing with the AVR DA/DB analog comparator.         |
| Developed in 2019 by MCUdude                                            |
| https://github.com/MCUdude/                                             |
|                                                                         |
| In this example we use an internal reference voltage instead of an      |
| external one on the negative pin. This eliminates the need for an       |
| external voltage divider to generate a reference. Note that the         |
| internal reference requires a stable voltage to function properly.      |
|                                                                         |
| This is the formula for the generated voltage:                          |
| Vdacref = (DACREF / 256) * Vref                                         |
|*************************************************************************/

#include <Comparator.h>

void setup() {
  // Configure relevant comparator parameters
  Comparator.input_p = in_p::in0;       // Use positive input 0 (PD2)
  Comparator.input_n = in_n::dacref;    // Connect the negative pin to the DACREF
voltage
  Comparator.reference = ref::vref_2v5; // Set the DACREF voltage to 2.5V
  Comparator.dacref = 127;              // Gives us 1.24V -> (127 / 256) * 2.5V =
1.24V
  Comparator.hysteresis = hyst::large;  // Use a 50mV hysteresis
  Comparator.output = out::enable;      // Enable output on digital pin 7 (PA7)

  // Initialize comparator
  Comparator.init();

  // Start comparator
  Comparator.start();
}

void loop() {

}
```

Result

Example failed to compile for board AVR DA-series

Error Messages

```
C:\Users\ivanFernandez\AppData\Local\Arduino15\packages\Microchip\hardware\megaavr
\1.0.0\libraries\Comparator\src\Comparator.cpp: In member function 'void
AnalogComparator::attachInterrupt(void (*)(), uint8_t)':
C:\Users\ivanFernandez\AppData\Local\Arduino15\packages\Microchip\hardware\megaavr
\1.0.0\libraries\Comparator\src\Comparator.cpp:670:3: error: 'AC_INTMODE_NORMAL_t'
was not declared in this scope
   AC_INTMODE_NORMAL_t intmode;
   ^~~~~~~~~~~~~~~~~~
C:\Users\ivanFernandez\AppData\Local\Arduino15\packages\Microchip\hardware\megaavr
\1.0.0\libraries\Comparator\src\Comparator.cpp:670:3: note: suggested alternative:
'AC_INTMODE_t'
   AC_INTMODE_NORMAL_t intmode;
   ^~~~~~~~~~~~~~~~~~
   AC_INTMODE_t
C:\Users\ivanFernandez\AppData\Local\Arduino15\packages\Microchip\hardware\megaavr
\1.0.0\libraries\Comparator\src\Comparator.cpp:674:7: error: 'intmode' was not
declared in this scope
       intmode = (AC_INTMODE_NORMAL_t)AC_INTMODE_NORMAL_POSEDGE_gc;
       ^~~~~~~
C:\Users\ivanFernandez\AppData\Local\Arduino15\packages\Microchip\hardware\megaavr
\1.0.0\libraries\Comparator\src\Comparator.cpp:674:7: note: suggested alternative:
'pinMode'
       intmode = (AC_INTMODE_NORMAL_t)AC_INTMODE_NORMAL_POSEDGE_gc;
       ^~~~~~~
       pinMode
C:\Users\ivanFernandez\AppData\Local\Arduino15\packages\Microchip\hardware\megaavr
\1.0.0\libraries\Comparator\src\Comparator.cpp:696:16: error: 'intmode' was not
declared in this scope
   AC.INTCTRL = intmode | AC_CMP_bm;
                ^~~~~~~
C:\Users\ivanFernandez\AppData\Local\Arduino15\packages\Microchip\hardware\megaavr
\1.0.0\libraries\Comparator\src\Comparator.cpp:696:16: note: suggested
alternative: 'pinMode'
   AC.INTCTRL = intmode | AC_CMP_bm;
                ^~~~~~~
                pinMode
exit status 1
Error compiling for board AVR DA-series.
```

Possible Fixes and Notes

1. AC_INTMODE_NORMAL_t intmode; is not declared within the scope of the program file, it is unable to compile and upload. The decalration does not exist within the Team 25 prototype core nor does it exist

within the Dx Core from which the prototype is based upon. The team must wait upon further updates before additional testing.