dunetpc - Bug #22193

Task # 22198 (New): Address various issues in protodune-sp reconstruction

Issues in SSPRawDecoder_module.cc

03/22/2019 04:18 PM - Tingjun Yang

Status:	Closed	**Start date:**	03/22/2019
Priority:	Normal	**Due date:**	
Assignee:	Bryan Ramson	**% Done:**	100%
Category:		**Estimated time:**	0.00 hour
Target version:			

Description

While debugging the protodune-sp reconstruction, I noticed two issues with SSPRawDecoder_module.cc.

1. The following variable is defined but not initialized and only used in a cout statement:

```
// more parameters from the FCL file
int fragment;
```

2. At line 861-862:

```
        if(int_ireftime_[ssp_map_[trig.module_id]] == 0) int_ireftime_[ssp_map_[trig.module_id]] = trig.internal_timestamp;
        if(ext_ireftime_[ssp_map_[trig.module_id]] == 0) ext_ireftime_[ssp_map_[trig.module_id]] = trig.timestamp_nova;
```

Both int_ireftime_ and ext_ireftime_ are arrays of size 24:

```
uint64_t int_ireftime_[24];
uint64_t ext_ireftime_[24];
```

However, ssp_map_ is defined as:

```
//mapping for SSPs to simple array
std::map<int,int> ssp_map_ =
  { {11,1},
    {12,2},
    {13,3},
    {14,4},
    {21,5},
    {22,6},
    {23,7},
    {24,8},
    {31,9},
    {32,10},
    {33,11},
    {34,12},
    {41,13},
    {42,14},
    {43,15},
    {44,16},
    {51,17},
    {52,18},
    {53,19},
    {54,20},
    {61,21},
    {62,22},
    {63,23},
    {64,24} };
```

so the output of ssp_map_ is from 1 to 24 (rather than 0 to 23). It can be a problem to access element 24 of arrays int_ireftime_ and ext_ireftime.

History

#1 - 03/24/2019 10:05 AM - Tingjun Yang

- Parent task set to #22198

#2 - 03/26/2019 08:54 AM - Tingjun Yang

Also there are errors in the log file:

```
%MSG-e OpHitFinder:  OpHitFinder:ophitExternal@BeginModule  23-Mar-2019 23:59:05 CDT run: 5809 subRun: 1 event
: 4503
Error! unrecognized channel number 208. Ignoring pulse
%MSG
%MSG-e OpHitFinder:  OpHitFinder:ophitExternal@BeginModule  23-Mar-2019 23:59:05 CDT run: 5809 subRun: 1 event
: 4503
Error! unrecognized channel number 209. Ignoring pulse
%MSG
%MSG-e OpHitFinder:  OpHitFinder:ophitExternal@BeginModule  23-Mar-2019 23:59:05 CDT run: 5809 subRun: 1 event
: 4503
Error! unrecognized channel number 210. Ignoring pulse
%MSG
%MSG-e OpHitFinder:  OpHitFinder:ophitExternal@BeginModule  23-Mar-2019 23:59:05 CDT run: 5809 subRun: 1 event
: 4503
Error! unrecognized channel number 211. Ignoring pulse
%MSG
%MSG-e OpHitFinder:  OpHitFinder:ophitExternal@BeginModule  23-Mar-2019 23:59:05 CDT run: 5809 subRun: 1 event
: 4503
Error! unrecognized channel number 212. Ignoring pulse
%MSG
%MSG-e OpHitFinder:  OpHitFinder:ophitExternal@BeginModule  23-Mar-2019 23:59:05 CDT run: 5809 subRun: 1 event
: 4503
Error! unrecognized channel number 213. Ignoring pulse
%MSG
%MSG-e OpHitFinder:  OpHitFinder:ophitExternal@BeginModule  23-Mar-2019 23:59:05 CDT run: 5809 subRun: 1 event
: 4503
Error! unrecognized channel number 214. Ignoring pulse
%MSG
%MSG-e OpHitFinder:  OpHitFinder:ophitExternal@BeginModule  23-Mar-2019 23:59:05 CDT run: 5809 subRun: 1 event
: 4503
Error! unrecognized channel number 215. Ignoring pulse
%MSG
%MSG-e OpHitFinder:  OpHitFinder:ophitExternal@BeginModule  23-Mar-2019 23:59:05 CDT run: 5809 subRun: 1 event
: 4503
Error! unrecognized channel number 88. Ignoring pulse
%MSG
%MSG-e OpHitFinder:  OpHitFinder:ophitExternal@BeginModule  23-Mar-2019 23:59:05 CDT run: 5809 subRun: 1 event
: 4503
Error! unrecognized channel number 89. Ignoring pulse
%MSG
%MSG-e OpHitFinder:  OpHitFinder:ophitExternal@BeginModule  23-Mar-2019 23:59:05 CDT run: 5809 subRun: 1 event
: 4503
Error! unrecognized channel number 90. Ignoring pulse
%MSG
%MSG-e OpHitFinder:  OpHitFinder:ophitExternal@BeginModule  23-Mar-2019 23:59:05 CDT run: 5809 subRun: 1 event
: 4503
Error! unrecognized channel number 91. Ignoring pulse
%MSG
%MSG-e OpHitFinder:  OpHitFinder:ophitExternal@BeginModule  23-Mar-2019 23:59:05 CDT run: 5809 subRun: 1 event
: 4503
Error! unrecognized channel number 92. Ignoring pulse
%MSG
%MSG-e OpHitFinder:  OpHitFinder:ophitExternal@BeginModule  23-Mar-2019 23:59:05 CDT run: 5809 subRun: 1 event
: 4503
Error! unrecognized channel number 93. Ignoring pulse
%MSG
%MSG-e OpHitFinder:  OpHitFinder:ophitExternal@BeginModule  23-Mar-2019 23:59:05 CDT run: 5809 subRun: 1 event
: 4503
Error! unrecognized channel number 94. Ignoring pulse
%MSG
%MSG-e OpHitFinder:  OpHitFinder:ophitExternal@BeginModule  23-Mar-2019 23:59:05 CDT run: 5809 subRun: 1 event
```

```
: 4503
Error! unrecognized channel number 95. Ignoring pulse
%MSG
%MSG-e OpHitFinder:  OpHitFinder:ophitExternal@BeginModule  23-Mar-2019 23:59:05 CDT run: 5809 subRun: 1 event
: 4503
Error! unrecognized channel number 184. Ignoring pulse
%MSG
%MSG-e OpHitFinder:  OpHitFinder:ophitExternal@BeginModule  23-Mar-2019 23:59:05 CDT run: 5809 subRun: 1 event
: 4503
Error! unrecognized channel number 185. Ignoring pulse
%MSG
%MSG-e OpHitFinder:  OpHitFinder:ophitExternal@BeginModule  23-Mar-2019 23:59:05 CDT run: 5809 subRun: 1 event
: 4503
Error! unrecognized channel number 186. Ignoring pulse
%MSG
%MSG-e OpHitFinder:  OpHitFinder:ophitExternal@BeginModule  23-Mar-2019 23:59:05 CDT run: 5809 subRun: 1 event
: 4503
Error! unrecognized channel number 187. Ignoring pulse
%MSG
%MSG-e OpHitFinder:  OpHitFinder:ophitExternal@BeginModule  23-Mar-2019 23:59:05 CDT run: 5809 subRun: 1 event
: 4503
Error! unrecognized channel number 188. Ignoring pulse
%MSG
%MSG-e OpHitFinder:  OpHitFinder:ophitExternal@BeginModule  23-Mar-2019 23:59:05 CDT run: 5809 subRun: 1 event
: 4503
Error! unrecognized channel number 189. Ignoring pulse
%MSG
%MSG-e OpHitFinder:  OpHitFinder:ophitExternal@BeginModule  23-Mar-2019 23:59:05 CDT run: 5809 subRun: 1 event
: 4503
Error! unrecognized channel number 190. Ignoring pulse
%MSG
%MSG-e OpHitFinder:  OpHitFinder:ophitExternal@BeginModule  23-Mar-2019 23:59:05 CDT run: 5809 subRun: 1 event
: 4503
Error! unrecognized channel number 191. Ignoring pulse
%MSG
%MSG-e OpHitFinder:  OpHitFinder:ophitExternal@BeginModule  23-Mar-2019 23:59:06 CDT run: 5809 subRun: 1 event
: 4503
Error! unrecognized channel number 40. Ignoring pulse
%MSG
%MSG-e OpHitFinder:  OpHitFinder:ophitExternal@BeginModule  23-Mar-2019 23:59:06 CDT run: 5809 subRun: 1 event
: 4503
Error! unrecognized channel number 41. Ignoring pulse
%MSG
%MSG-e OpHitFinder:  OpHitFinder:ophitExternal@BeginModule  23-Mar-2019 23:59:06 CDT run: 5809 subRun: 1 event
: 4503
Error! unrecognized channel number 42. Ignoring pulse
%MSG
%MSG-e OpHitFinder:  OpHitFinder:ophitExternal@BeginModule  23-Mar-2019 23:59:06 CDT run: 5809 subRun: 1 event
: 4503
Error! unrecognized channel number 43. Ignoring pulse
%MSG
%MSG-e OpHitFinder:  OpHitFinder:ophitExternal@BeginModule  23-Mar-2019 23:59:06 CDT run: 5809 subRun: 1 event
: 4503
Error! unrecognized channel number 44. Ignoring pulse
%MSG
%MSG-e OpHitFinder:  OpHitFinder:ophitExternal@BeginModule  23-Mar-2019 23:59:06 CDT run: 5809 subRun: 1 event
: 4503
Error! unrecognized channel number 45. Ignoring pulse
%MSG
%MSG-e OpHitFinder:  OpHitFinder:ophitExternal@BeginModule  23-Mar-2019 23:59:06 CDT run: 5809 subRun: 1 event
: 4503
Error! unrecognized channel number 46. Ignoring pulse
%MSG
%MSG-e OpHitFinder:  OpHitFinder:ophitExternal@BeginModule  23-Mar-2019 23:59:06 CDT run: 5809 subRun: 1 event
: 4503
Error! unrecognized channel number 47. Ignoring pulse
%MSG
```

Are they expected?

#3 - 03/26/2019 09:46 AM - Alexander Himmel

Those errors are showing up in current development? If so, they're not expected. I will try to take a look.

#4 - 03/26/2019 09:49 AM - Tingjun Yang

Alexander Himmel wrote:

> Those errors are showing up in current development? If so, they're not expected. I will try to take a look.

Yes, for example, here is the error output from a recent CI test:
http://dbweb5.fnal.gov:8080/LarCI/app/ns:dune/storage/docs/2019/03/26/stderr__00BwIaA.log

#5 - 03/26/2019 09:52 AM - Alexander Himmel

OK -- looking into it now.

#6 - 03/26/2019 11:35 AM - Alexander Himmel

Ah, nevermind. This is real data, so this is normal. These are electronics channels not actually connected to a detector. We read them out, but they never have signal, and the reconstruction doesn't know what to do with them since they don't correspond to any particular part of space, so they get ignored.

#7 - 03/26/2019 11:58 AM - Alexander Himmel

Also, for context on this issue generally, the items you mention above look like a bit of leftover detritus from when Bryan removed a bunch of debugging information from the decoder. We should certainly finish cleaning up, but I don't think it's an urgent issue.

#8 - 03/26/2019 12:48 PM - Tingjun Yang

Thanks Alex for your comments.

#9 - 03/29/2019 10:37 AM - Tingjun Yang

- % Done changed from 0 to 100

- Status changed from Assigned to Resolved

Fixed by Bryan: 573233a425612eac21d61e53037fed8c96c16a55

#10 - 08/18/2019 10:02 AM - Tingjun Yang

- Status changed from Resolved to Closed