

Detector identifiers

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The purpose

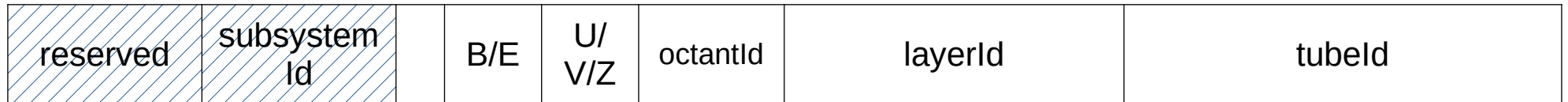
- Unique id for each detector element
 - Detector reference in every hit to access geometry and material information
 - Detector reference for calibration and alignment
- Naming convention is necessary to code basic geometry properties (subsystemId, layerId, barrel/endcap etc)

Identifier

- Unsigned int (32 bit)
- 4 bits: subsystem id
- 4 bits: reserved
- 24 bits: subsystem-specific information
 - barrel/endcap
 - layerId
 - cellId/tubId
 - ...

Example: straw tracker

- 9 bits: tubelId
- 7 bits: layerId
- 3 bits: octantId
- 2 bits: U,V,Z
- 2 bits: barrel/endcap



How to use

```
Identifier id;  
if(id.subsystem() == E_ST)  
{  
    StIdentifier* stid = static_cast<StIdentifier*>(&id);  
    int layer = stid → layerId();  
    ...  
}
```