

Hits

```
GateDigitizer::Digitize()
```

```
{
```

```
    m_hitConvertor->ProcessHits(CHC);
```

```
    GatePulseList*  
GateHitConvertor::ProcessHits(const  
    GateCrystalHitsCollection* hitCollection)  
    {  
        ..  
        ProcessOneHit( (*hitCollection)[i], pulseList);  
        ..  
    }
```

Store Pulse List
Srire Alias

```
void  
GateHitConvertor::ProcessOneHit(const GateCrystalHit* hit, GatePulseList* pulseList)  
    {  
        ..  
        Process hits  
        ..  
    }
```

Pulses

DigitizePulses();

```
void GateDigitizer::DigitizePulses()
{
    ..

    GetChain(i)->ProcessPulseList();
    ..
}
```

Store Pulse List
Srire Alias

GetChain(i) :
GatePulseProcessorChain::GatePulseProcessorChain(GateDigitizer* itsDigitizer, const G4String& itsOutputName)

GatePulseList*
GatePulseProcessorChain::ProcessPulseList() (in physics)

```
{
    ..
    Find Pulse List
    pulseList =
    GetProcessor(processorID) → ProcessPulseList(pulseList);
    ..
}
```

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Singles

```
m_coincidenceSorterList[i] → ProcessSinglePulseList();
```

```
void
GateCoincidenceSorter::ProcessSinglePulseList(GatePulseLi
st* inp)
{

...
ProcessCompletedCoincidenceWindow(coincidence);
<storing pulses in a buffer>
<add event to coincidences
coincidence = new
GateCoincidencePulse(m_outputName,pulse>window,offset);
>

}
```

```
void
GateCoincidenceSorter::I
ow(GateCoincidencePuls
{
...
}
```

Store Pulse List
Srre Alias

Coincidences

```
m_coincidenceSorterList[i] → ProcessCoincidencePulses();
```

...

Store Pulse List
Srire Alias

DigiMakers

GateDigitizer:: Digitize()

GateCrystalHitCollection

GateHitConvertor ::
ProcessHits(GateCrystalHitCollection)

Store Pulse List 'digitizer/convertor'
Store Alias 'Hits' for list 'digitizer/convertor'

DigitizePulses();

- launching processor chain 'digitizer/Singles'
- GatePulseProcessorChain::ProcessPulseList() (in physics)
 - Find Pulse List 'Hits'
 - Create New pulse List 'digitizer/Singles/adder'
 - Process Pulse List
(GateVPulseProcessor::ProcessPulseList(...)) (in physics)
 - Return output Pulse List
- Store new Pulse List 'digitizer/Singles/adder'

GateDigitizer:: Digitize()

GateCrystalHitCollection

GateHitConvertor ::
ProcessHits(GateCrystalHitCollection)

Store Pulse List 'digitizer/convertor'
Store Alias 'Hits'

DigitizePulses();

- **launching processor chain 'digitizer/Singles'**
- **GatePulseProcessorChain::ProcessPulseList() (in physics)**
 - **Find Pulse List 'digitizer/Singles/adder'**
 - **Create New pulse List 'digitizer/Singles/readout'**
 - **Process Pulse List**
(GateVPulseProcessor::ProcessPulseList(...)) (in physics)
 - **Return output Pulse List**
- **Store new Pulse List 'digitizer/Singles/readout'**

GateDigitizer:: Digitize()

GateCrystalHitCollection

GateHitConvertor ::
ProcessHits(GateCrystalHitCollection)

Store Pulse List 'digitizer/convertor'
Store Alias 'Hits'

DigitizePulses();

- **launching processor chain 'digitizer/Singles'**
- **GatePulseProcessorChain::ProcessPulseList() (in physics)**
 - **Find Pulse List 'digitizer/Singles/readout'**
 - **Create New pulse List 'digitizer/Singles/bluring'**
 - **Process Pulse List**
(GateVPulseProcessor::ProcessPulseList(...)) (in physics)
 - **Return output Pulse List**
- **Store new Pulse List 'digitizer/Singles/bluring'**

GateDigitizer:: Digitize()

GateCrystalHitCollection

GateHitConvertor ::
ProcessHits(GateCrystalHitCollection)

Store Pulse List 'digitizer/convertor'
Store Alias 'Hits'

DigitizePuls

- Store new Pulse List 'digitizer/Singles/blurring'
- Store Alias 'Singles' for list 'digitizer/Singles/blurring'
- launching coincidence sorter 'digitizer/Coincidences'
 - Get Pulse List 'Singles'
 - Process Singles [GateCoincidenceSorter :: ProcessSinglePulseList()]
 - GateCoincidenceSorter::ProcessCompletedCoincidenceWindow
 - Store New coincidence pulse
 - ... multiple coincidences ???

GateDigitizer:: Digitize()

GateCrystalHitCollection

GateHitConvertor ::
ProcessHits(GateCrystalHitCollection)

Store Pulse List 'digitizer/convertor'
Store Alias 'Hits'

DigitizePuls

- **launching coincidence sorter 'digitizer/delay'**
 - **Get Pulse List 'Singles'**
 - **Process Singles [GateCoincidenceSorter :: ProcessSinglePulseList()]**
 - **GateCoincidenceSorter::ProcessCompletedCoincidenceWindow**
 - **Store New coincidence pulse**

GateDigitizer:: Digitize()

GateCrystalHitCollection

GateHitConvertor ::
ProcessHits(GateCrystalHitCollection)

Store Pulse List 'digitizer/convertor'
Store Alias 'Hits'

DigitizePulses();

m_digiMakerList[i] → Digitize();

GateSingleDigiMaker::Digitize()

- launching digitizer module 'digitizer/Singles/digiMaker'
- Get Pulse List 'Singles'
- GateSingleDigiMaker::ConvertSinglePulseList(..)
- Create single digits

GateDigitizer:: Digitize()

GateCrystalHitCollection

GateHitConvertor ::
ProcessHits(GateCrystalHitCollection)

Store Pulse List 'digitizer/convertor'
Store Alias 'Hits'

DigitizePulses();

m_digiMakerList[i] → Digitize();

GateCoincidenceDigiMaker::Digitize()

- launching digitizer module
'digitizer/Coincidence/digiMaker'
- Get Pulse List 'Coincidence'
- .. (for multiple coinc??)
- Create coincidence digi

GateDigitizer:: Digitize()

GateCrystalHitCollection

GateHitConvertor ::
ProcessHits(GateCrystalHitCollection)

Store Pulse List 'digitizer/convertor'
Store Alias 'Hits'

DigitizePulses();

m_digiMakerList[i] → Digitize();

GateSingleDigiMaker::Digitize()

- launching digitizer module
'digitizer/digitizer/Singles/adder/digiMaker'
- Get Pulse List 'digitizer/Singles/adder'
- GateSingleDigiMaker::ConvertSinglePulseList(..)
- Create single digits

GateDigitizer:: Digitize()

GateCrystalHitCollection

GateHitConvertor ::
ProcessHits(GateCrystalHitCollection)

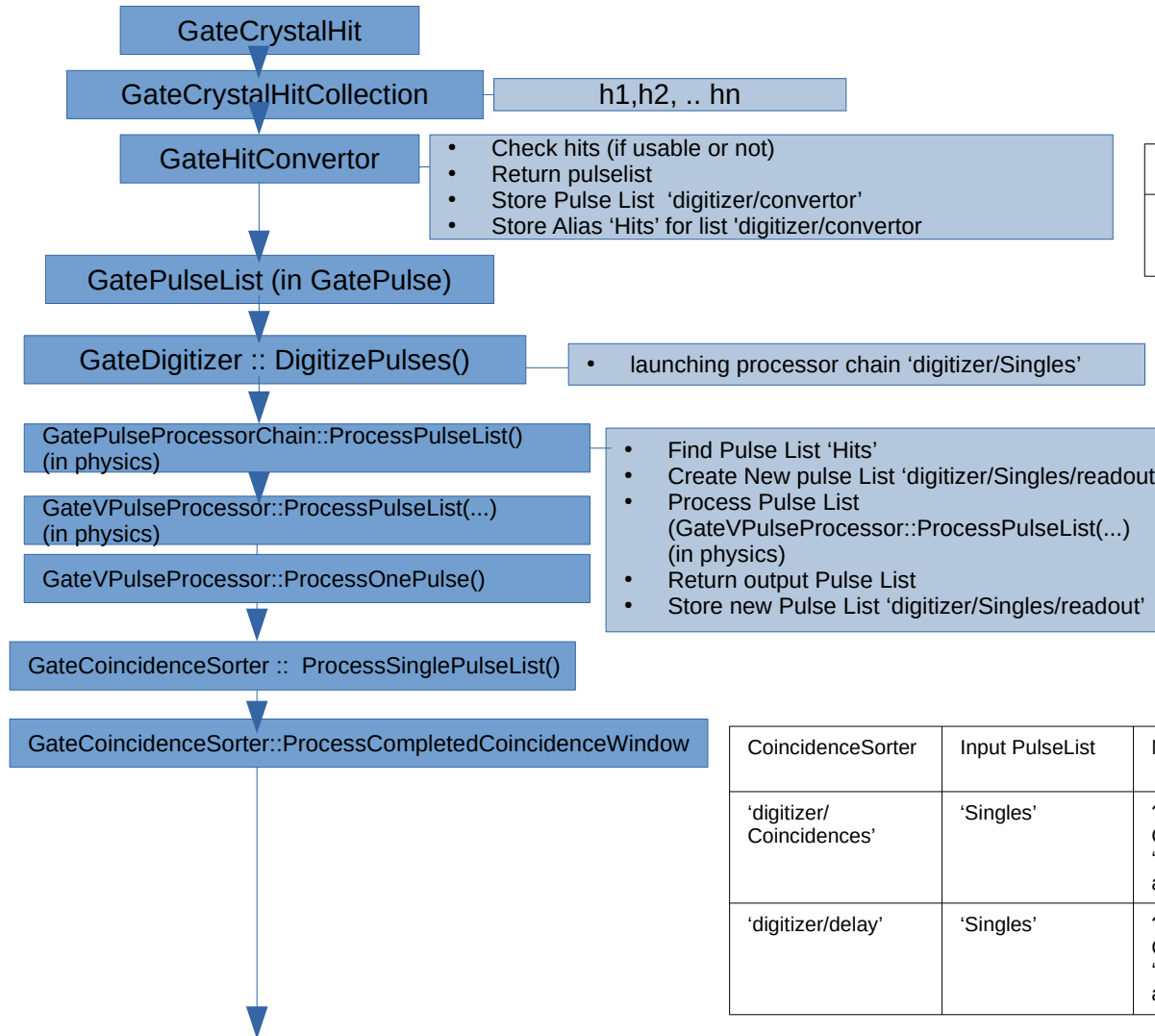
Store Pulse List 'digitizer/convertor'
Store Alias 'Hits'

DigitizePulses();

m_digiMakerList[i] → Digitize();

GateSingleDigiMaker::Digitize()

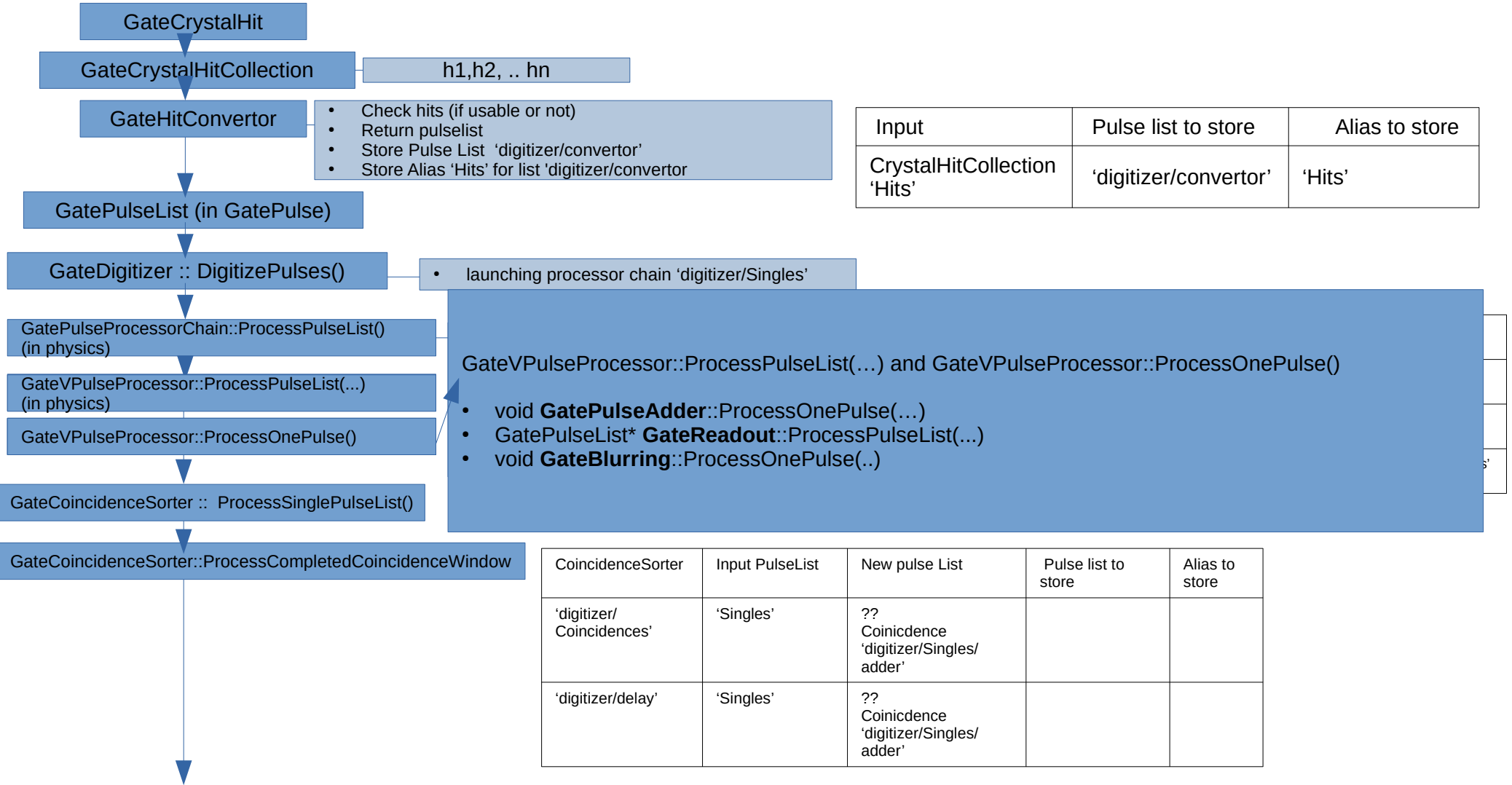
- launching digitizer module
'digitizer/delay/digiMaker'
- ...

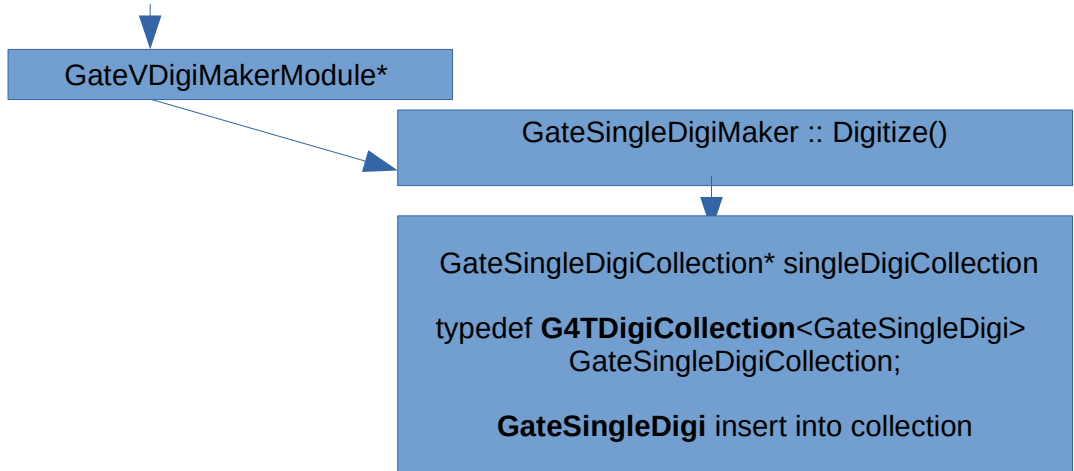


Input	Pulse list to store	Alias to store
CrystalHitCollection 'Hits'	'digitizer/convertor'	'Hits'

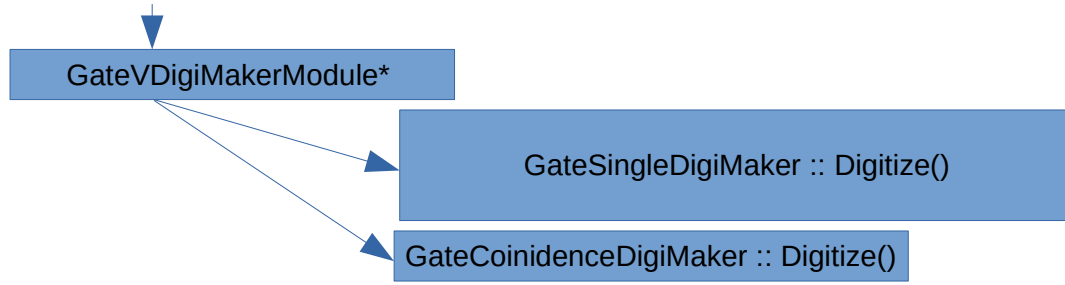
ProcessorChain	Input PulseList	New pulse List	Pulse list to store	Alias to store
'digitizer/Singles'	'Hits'	'digitizer/Singles/adder'		
	'digitizer/Singles/adder'	'digitizer/Singles/readout'		
	'digitizer/Singles/readout'	'digitizer/Singles/blurring'	'digitizer/Singles/blurring'	'Singles'

CoincidenceSorter	Input PulseList	New pulse List	Pulse list to store	Alias to store
'digitizer/Coincidences'	'Singles'	?? Coincidence 'digitizer/Singles/adder'		
'digitizer/delay'	'Singles'	?? Coincidence 'digitizer/Singles/adder'		





Digitizer Module	Input PulseList	Output
'digitizer/Singles/ digiMaker'	'Singles'	Single digits
'digitizer/ Coincidences/ digiMaker'	'Coincidence'	
'digitizer/digitizer/ Singles/adder/ digiMaker'	'digitizer/Singles/adder'	
'digitizer/digitizer/ Singles/readout/ digiMaker'	'digitizer/Singles/readout'	
'digitizer/digitizer/ Singles/bluring/ digiMaker'	'digitizer/Singles/bluring'	
'digitizer/delay/ digiMaker'		



Digitizer Module	Input PulseList	Output
'digitizer/Singles/digiMaker'	'Singles'	Single digits
'digitizer/Coincidences/digiMaker'	'Coincidence'	
'digitizer/digitizer/Singles/adder/digiMaker'	'digitizer/Singles/adder'	
'digitizer/digitizer/Singles/readout/digiMaker'	'digitizer/Singles/readout'	
'digitizer/digitizer/Singles/bluring/digiMaker'	'digitizer/Singles/bluring'	
'digitizer/delay/digiMaker'		

