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Using from

The following explains the procedure on how to setup the TrigConfBunchCrossingTool to access BC information from inside EventLoop. This has been tested in AnalysisBase 2.4.28 with TrigBunchCrossingTool -00-04-20.

Small fix in

A local instance of the TrigBunchCrossingTool is required as a minor change needs to be applied within the tool to make it work within EventLoop

```
rc checkout_pkg TrigBunchCrossingTool
```

Now open TrigBunchCrossingTool /Root/TrigConfBunchCrossingTool.cxx. Line 47 reads

```
m_configTool( "TrigConf::xAODConfigTool" ) {
```

and change this to

```
m_configTool( "xAODConfigTool" ) {
```

Setting up the tool in

Include the needed dependencies in cmt/Makefile.RootCore

```
PACKAGE_DEP = [...] TrigBunchCrossingTool TrigConfxAOD TrigConfHLTDat
```

where [...] stands for all other dependencies. In the *.h file of the package we add the following three headers

```
#include "TrigConfxAOD/xAODConfigTool.h"
#include "TrigConfInterfaces/ITrigConfigTool.h"
#include "TrigBunchCrossingTool/TrigConfBunchCrossingTool.h"
```

and in public: declare both a new instance of the trigger configuration tool and the BC tool

```
xAODConfigTool *m_configTool;                                          //!
Trig::TrigConfBunchCrossingTool *m_trigConfBunchCrossingTool;          //!
```

Now we look into the packages source code in *.cxx. Add the following lines to the initialize() function:

```
// Trigger configuration tool
m_configTool = new xAODConfigTool("xAODConfigTool");
ToolHandle<TrigConf::ITrigConfigTool> configHandle( m_configTool );
ANA_CHECK( configHandle->initialize() );

// BunchCrossingTool
m_trigConfBunchCrossingTool = new Trig::TrigConfBunchCrossingTool("TrigConfBunchCrossingTool");
m_trigConfBunchCrossingTool->setProperty( "OutputLevel", MSG::INFO);
ANA_CHECK( m_trigConfBunchCrossingTool->initialize() );
```

Using the BC tool

Bunch crossing information can be easily read in the execute(), e.g. to check whether a BC was filled ones needs to put in the BCID of the collision

```
const bool result = m_trigConfBunchCrossingTool->isFilled( eventInfo->bcid() );
```

The available functions can be seen from TrigBunchCrossingTool
/TrigBunchCrossingTool/BunchCrossingToolBase.h

-- JochenJensHeinrich - 2017-05-10

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