

art - Feature #19970

Configuration validation for event mixing

05/16/2018 09:47 AM - Andrei Gaponenko

Status:	Closed	Start date:	05/16/2018
Priority:	Normal	Due date:	
Assignee:	Kyle Knoepfel	% Done:	100%
Category:	Infrastructure	Estimated time:	0.00 hour
Target version:	3.02.00	Spent time:	4.00 hours
Scope:	Internal	SSI Package:	art
Experiment:	Mu2e		
Description			
Hello,			
Please provide a way to create event mixing modules with the configuration validation functionality. The art/Framework/Modules/MixFilter.h template can pass to the user code only a ParameterSet, not Table<Config> at the moment.			
Andrei			

History

#1 - 05/21/2018 10:31 AM - Kyle Knoepfel

- Status changed from New to Accepted

#2 - 06/15/2018 09:43 AM - Kyle Knoepfel

- Target version set to Vega

#3 - 06/15/2018 10:02 AM - Kyle Knoepfel

- Status changed from Accepted to Assigned

- Assignee set to Kyle Knoepfel

- % Done changed from 0 to 90

This feature is almost complete. Interestingly, this issue is slightly coupled to issue [#20063](#) as enabling configuration validation has induced a change in how the random number engines are configured. Once that issue is resolved, I will mark this one as resolved, too.

To enable configuration validation and description, one will need to provide the 'Parameters' type, which is an alias to art::MixFilterTable<Config>, per the usual pattern:

```
class MyMixFilterDetail {
public:
    struct Config{
        fhicl::Atom<bool> someFlag{fhicl::Name{"someFlag"}};
        // ...
    }
    using Parameters = art::MixFilterTable<Config>;
    explicit MyMixFilterDetail(Parameters const& p,
                              art::MixHelper&);

    // ...
}
```

Providing the Parameters type does the following:

- Adds the EDFilter parameters to the allowed configuration
- Adds the MixHelper parameters to the allowed configuration
- Adds the detail parameters to the allowed configuration
- **Requires** users to specify the Parameters type in the detail constructor

In essence, unlike bare modules, providing the Parameters type not only provides configuration description, but it also *requires* configuration validation. For bare modules, it is allowed to provide the Parameters type (i.e. enable configuration description) but the user can still specify fhicl::ParameterSet as the constructor argument type (i.e. not enable configuration validation). Description and validation cannot be separated for MixFilter detail classes.

#4 - 06/15/2018 01:29 PM - Kyle Knoepfel

- *Category set to Infrastructure*
- *Status changed from Assigned to Resolved*
- *% Done changed from 90 to 100*
- *SSI Package art added*

Implemented with commit [art:d00ef23](#).

#5 - 06/15/2018 01:32 PM - Kyle Knoepfel

- *Experiment Mu2e added*
- *Experiment deleted (-)*

#6 - 08/20/2018 01:50 PM - Kyle Knoepfel

- *Target version changed from Vega to 3.01.00*

#7 - 09/26/2018 10:05 AM - Kyle Knoepfel

- *Target version changed from 3.01.00 to 3.02.00*

#8 - 01/31/2019 02:05 PM - Kyle Knoepfel

- *Status changed from Resolved to Closed*