

# Package: FIMS (via r-universe)

September 24, 2024

**Title** The Fisheries Integrated Modeling System

**Version** 0.2.0.0

**Description** The Fisheries Integrated Modeling System is a next-generation framework of stock assessment models, assisting fishery managers with the goal of achieving sustainable fisheries. This system, when completed in a few years, offers the NOAA Fisheries and global fisheries science communities an advanced set of stock assessment models. These tools can be used separately or in combination to incorporate ecosystem and socioeconomic data and models, as well as climate effects and other drivers within the marine environment, into stock assessment models.

**License** GPL (>= 3) | file LICENSE

**URL** <https://github.com/noaa-fims/fims>, <https://noaa-fims.github.io>

**BugReports** <https://github.com/noaa-fims/fims/issues>

**Depends** R (>= 4.0)

**Imports** dplyr, ggplot2, jsonlite, methods, Rcpp, scales, TMB (>= 1.8.0)

**Suggests** covr, knitr, parallel, remotes, rmarkdown, snowfall, testthat (>= 3.0.0), tidyverse, usethis, withr

**LinkingTo** Rcpp, RcppEigen, TMB

**VignetteBuilder** knitr

**Config/testthat/edition** 3

**Config/testthat/parallel** true

**Encoding** UTF-8

**LazyData** true

**NeedsCompilation** yes

**Roxygen** list(markdown = TRUE)

**RoxygenNote** 7.3.2

**SystemRequirements** GNU make

**Repository** <https://noaa-fisheries-integrated-toolbox.r-universe.dev>

**RemoteUrl** <https://github.com/noaa-fims/fims>

**RemoteRef** HEAD

**RemoteSha** f0d4e766ddfc70c6dbb99e92385298c31ccff136

## Contents

data_mile1 . . . . .	2
FIMSFrame . . . . .	3
m_agecomp . . . . .	4
m_agecomp,FIMSFrame-method . . . . .	4
m_index . . . . .	5
m_index,FIMSFrame-method . . . . .	5
m_landings . . . . .	6
m_landings,FIMSFrame-method . . . . .	6
run_gtest . . . . .	6
setup_and_run_gtest . . . . .	7
setup_gtest . . . . .	7
<b>Index</b>	<b>8</b>

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data_mile1	<i>FIMS input data frame for milestone 1</i>
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## Description

A dataset containing information necessary to run an age-structured stock assessment model in FIMS for milestone 1. This data was generated using the ASSAMC package written for the [model comparison project](#).

## Usage

```
data_mile1
```

## Format

A data frame with 1140 observations of 8 variables:

**type** The type of data the row contains. Allowed types include age, index, landings, and weight-at-age data.

**name** A character string providing the name of the information source that the data was collected from, e.g., "Trawl fishery"

**age** An integer age. Entry can be NA if information pertains to multiple ages, e.g., total catch rather than catch of age-4 fish.

**datestart,dateend** Start and end dates of the data collection period. Format all dates using yyyy-mm-dd, which can accommodate fake years such as 0001-01-01.

**value** The measurement of interest.

**unit** A character string specifying the units of value. Allowed units for each data type are as follows. `mt` is used for index, landings, and weight-at-age data. `number` or `proportion` are each viable units for the composition data, where the former is the preferred unit of measurement.

**uncertainty** A real value providing a measurement of uncertainty for value. For catches and survey indices of abundance this should be the standard deviation of the logged observations if you are using the lognormal distribution to fit your data. For composition data it will be your input sample size.

### Source

[www.github.com/Bai-Li-NOAA/Age\\_Structured\\_Stock\\_Assessment\\_Model\\_Comparison](https://www.github.com/Bai-Li-NOAA/Age_Structured_Stock_Assessment_Model_Comparison)

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FIMSFrame

*Class constructors for FIMSFrame and associated child classes*

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### Description

All constructor functions take a single input and build an object specific to the needs of each model type within **FIMS**. `FIMSFrame` is the parent class and the associated child classes have additional slots needed for each model type.

### Usage

```
FIMSFrame(data)
```

### Arguments

<code>data</code>	A <code>data.frame</code> that contains the necessary columns to construct a data frame of a given <code>FIMSFrame</code> -class.
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### Value

An object of the S4 class `FIMSFrame` or one of its child classes is validated and then returned. All objects will at a minimum have a slot called `data` to store the input data frame. Additional slots are dependent on the child class. Use `showClass()` to see all available slots.

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m_agecomp	<i>Get the age-composition data to be used in the model</i>
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**Description**

Get the age-composition data to be used in the model

**Usage**

```
m_agecomp(x, fleet_name)
```

**Arguments**

x	The object containing the age-composition data.
fleet_name	The name of the fleet for the age-composition data.

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m_agecomp, FIMSFrame-method	<i>Get the age-composition data data to be used in the model</i>
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**Description**

Get the age-composition data data to be used in the model

**Usage**

```
## S4 method for signature 'FIMSFrame'  
m_agecomp(x, fleet_name)
```

**Arguments**

x	The FIMSFrame containing age-composition data.
fleet_name	The name of the fleet for the age-composition data.

---

m_index	<i>Get the index data to be used in the model</i>
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**Description**

Get the index data to be used in the model

**Usage**

```
m_index(x, fleet_name)
```

**Arguments**

x	The object containing index.
fleet_name	The name of the fleet for the index data.

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m_index, FIMSFrame-method	<i>Get the index data to be used in the model</i>
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---

**Description**

Get the index data to be used in the model

**Usage**

```
## S4 method for signature 'FIMSFrame'  
m_index(x, fleet_name)
```

**Arguments**

x	The FIMSFrame object containing index.
fleet_name	The name of the fleet for the index data.

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m_landings	<i>Get the landings data to be used in the model</i>
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**Description**

Get the landings data to be used in the model

**Usage**

```
m_landings(x)
```

**Arguments**

x	The object containing landings.
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m_landings, FIMSFrame-method	<i>Get the landings data to be used in the model</i>
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**Description**

Get the landings data to be used in the model

**Usage**

```
## S4 method for signature 'FIMSFrame'
m_landings(x)
```

**Arguments**

x	The FIMSFrame object containing landings.
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run_gtest	<i>Run the google test suite</i>
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**Description**

Intended for developers to run the google test suite from R.

**Usage**

```
run_gtest(...)
```

**Arguments**

...	Additional arguments to ctest --test-dir build such as "--rerun-failed --output-on-failure".
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setup\_and\_run\_gtest     *Setup and run the google test suite*

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**Description**

Intended for developers to set up their local environment and run the google test suite from R.

**Usage**

```
setup_and_run_gtest(...)
```

**Arguments**

...            Additional arguments to ctest --test-dir build such as "--rerun-failed --output-on-failure".

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setup\_gtest             *Set up your local environment to run the google tests locally*

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**Description**

Intended for developers to set up their local environment prior to running the integration tests.

**Usage**

```
setup_gtest()
```

**Examples**

```
## Not run:  
setup_gtest()  
  
## End(Not run)
```

# Index

## \* **datasets**

data\_mile1, [2](#)

## \* **gtest\_helper**

run\_gtest, [6](#)

setup\_and\_run\_gtest, [7](#)

setup\_gtest, [7](#)

data\_mile1, [2](#)

FIMSFrame, [3](#)

m\_agecomp, [4](#)

m\_agecomp, FIMSFrame-method, [4](#)

m\_index, [5](#)

m\_index, FIMSFrame-method, [5](#)

m\_landings, [6](#)

m\_landings, FIMSFrame-method, [6](#)

run\_gtest, [6](#)

setup\_and\_run\_gtest, [7](#)

setup\_gtest, [7](#)

showClass(), [3](#)