Package: martelosim (via r-universe)

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Title Report Production from Marteloscopes with Capsis

Version 0.1.3

Description The goal of this package is to help users in using Capsis softawre and compile reports for field workshops. The workshop consist in predicting management effects on forest stand within the capsis platform.

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Contents

build_samsa2_files 2
find_marking 3

HClasses . . . 3
iplus_action . . . 4
iplus_reason . . . 4
mart_scales . . . 5
martelo_maps . . . 5
martelo_report . . . 6
martelosim . . . 7
martelosim_evol . . . 7
martelosim_hist . . . 8
martelosim_map . . . 8
martelosim_options . . . 9
martelosim_pixelmap . . . 10
martheme . . . 10
new_inventory . . . 11
prepare_samsara . . . 11
random_marking . . . 12
run_samsara . . . 13
scenarios . . . 13
scenarios_weights . . . 14
Species_Weight_S2 . . . 14
write_prep_samsara_cmd . . . 15
write_samsara_cmd . . . 15
write_silviculture_sheet . . . 16

Index **18**

`build_samsa2_files` *Build Samsara txt files from xlsx inventory*

Description

Build Samsara txt files from xlsx inventory

Usage

```
build_samsa2_files(
  file = file.path("data", sprintf("Data_Marteloscope_%s.xlsx", getOption("mart_site"))),
   verbose = TRUE
)
```

Arguments

`file`	inventory file in xlsx, by default Data_marteloscope_<site>.xlsx
`verbose`	Allow to print messages. False by default.

find_marking *Open or message marking file*

Description

Open or message marking file

Usage

```
find_marking(open = TRUE, verbose = TRUE)
```

Arguments

open	Open files with sheet editor. TRUE by default
verbose	Write nice messages, TRUE by default

HClasses *Sapplings height classes*

Description

Sapplings height classes

Usage

```
HClasses
```

Format

An object of class `data.frame` with 4 rows and 3 columns.

Source

Benoit Courbaud

iplus_action *iplus traduction for martelage*

Description

iplus traduction for martelage

Usage

```
iplus_action
```

Format

An object of class `data.frame` with 4 rows and 3 columns.

Source

Benoit Courbaud

iplus_reason *iplus traduction for martelage*

Description

iplus traduction for martelage

Usage

```
iplus_reason
```

Format

An object of class `data.frame` with 11 rows and 3 columns.

Source

Benoit Courbaud

mart_scales *Plots color scales for reports*

Description

Plots color scales for reports

Usage

```
mart_scales
```

Format

An object of class `list` of length 9.

Source

Benoit Courbaud

martelo_maps *Render maps for field identification of interesting trees*

Description

Render maps for field identification of interesting trees

Usage

```
martelo_maps()
```

Value

Create a pdf file.

`martelo_report` *Render report for one group*

Description

Render report for one group

Usage

```
martelo_report(
  marking_groups = "X",
  dendrometry = TRUE,
  regeneration = TRUE,
  light = TRUE,
  harvest = TRUE,
  carbon = TRUE,
  biodiversity = TRUE,
  rockfall = TRUE,
  snow = TRUE,
  economy = TRUE,
  multi = FALSE
)
```

Arguments

`marking_groups`	Group Name. Must be a group present.
`dendrometry`	Print the page about this subject. TRUE by default.
`regeneration`	Print the page about this subject. TRUE by default.
`light`	Print the page about this subject. TRUE by default.
`harvest`	Print the page about this subject. TRUE by default.
`carbon`	Print the page about this subject. TRUE by default.
`biodiversity`	Print the page about this subject. TRUE by default.
`rockfall`	Print the page about this subject. TRUE by default.
`snow`	Print the page about this subject. TRUE by default.
`economy`	Print the page about this subject. TRUE by default.
`multi`	Render a different report with only comparative plots

Value

Create a pdf file.

`martelosim` *martelosim*

Description

Report production from marteloscopes with Capsis

Details

The goal of this package is to help users in using Capsis softawre and compile reports for field workshops. The workshop consist in predicting management effects on forest stand within the capsis platform.

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See Also

Useful links:

- https://forge.inrae.fr/lessem/rpackages/martelosim

`martelosim_evol` *Plot the map of a marteloscope*

Description

Choose with what column you need to fill the tree points

Usage

```
martelosim_evol(data, y_col, fill_col, fill_scale, ...)
```

Arguments

`data`	data.frame with columns Year.
`y_col`	column to use for y axis of the plot. Col is because it's geom_area
`fill_col`	column on which to fill. Write as ggplot input in `aes()`
`fill_scale`	manual fill scale to be given as values in `scale_fill_manual()`
`...`	scales for action shape and color. color_scale and shape_scale values are set

martelosim_hist *Plot the map of a marteloscope*

Description

Choose with what column you need to fill the tree points

Usage

```
martelosim_hist(data, x, y, fill, fill_scale, ...)
```

Arguments

data	data.frame with columns Year.
x	column to plot in x
y	column to plot in y
fill	column on which to fill. Write as ggplot input in aes()
fill_scale	manual fill scale to be given as values in scale_fill_manual()
...	scales for action shape and color. color_scale and shape_scale values are set

martelosim_map *Plot the map of a marteloscope*

Description

Choose with what column you need to fill the tree points

Usage

```
martelosim_map(
  data,
  fill_col,
  fill_scale,
  poly,
  label = FALSE,
  action = FALSE,
  limits = NULL,
  ...
)
```

Arguments

data	data.frame with columns X_m, Y_m, D_cm, Id. Two first are the position of trees, Id a label, D_cm the diameter.
fill_col	column on which to fill. Write as ggplot input in aes()
fill_scale	manual fill scale to be given as values in scale_fill_manual()
poly	polygon of the marteloscope. From inventory
label	TRUE FALSE add labels to trees
action	TRUE FALSE add action shape and color to plot.
limits	NULL by default. Recompute x and y scales
...	scales for action shape and color. color_scale and shape_scale values are set

---

martelosim_options *Log some options for the project.*

Description

Log some options for the project.

Usage

```
martelosim_options(
  capsis_exe_path,
  site,
  date,
  trainer,
  trainer_email,
  data_file_path,
  lang = c("en", "fr"),
  verbose = TRUE
)
```

Arguments

capsis_exe_path	capsis executable path
site	Name of the marteloscope site
date	Date of the marteloscope exercise
trainer	Name of the site trainer
trainer_email	Contact for the trainer
data_file_path	Path for inventory file, testing if no special character
lang	Language, still in development
verbose	Print nice messages. TRUE by default

martelosim_pixelmap *Plot the map of a marteloscope with pixels*

Description

Choose with what column you need to fill the tree points

Usage

```
martelosim_pixelmap(
  data,
  treedata,
  fill_col,
  fill_scale,
  poly,
  action = FALSE,
  limits = NULL,
  ...
)
```

Arguments

data	data.frame with columns X_m, Y_m, Cell_Id. Intended for polygons plots
treedata	data.frame with X_m, Y_m, D_cm and Action columns Two first are the position of trees, Id a label, D_cm the diameter.
fill_col	column on which to fill. Write as ggplot input in aes()
fill_scale	manual fill scale to be given as values in scale_fill_manual()
poly	polygon of the marteloscope. From inventory
action	TRUE FALSE add action shape and color to plot.
limits	NULL by default. Recompute x and y scales
...	scales for action shape and color. color_scale and shape_scale values are set

martheme *common themes for plots in martelosim reports*

Description

common themes for plots in martelosim reports

Usage

```
martheme()
```

`new_inventory` *Create a new inventory from previous marteloscope*

Description

Create a new inventory from previous marteloscope

Usage

```
new_inventory(
  inv_site = c("new", "copy", "Prelenfrey", "Brin", "Sailershausen1"),
  inv_file = NULL,
  lang = c("en", "fr"),
  open = TRUE,
  verbose = FALSE
)
```

Arguments

`inv_site`	name of the site. If the site exist, it will initiate xlsx file for the users. If not, it propose a new empty file (default).
`inv_file`	NULL by default. If copy, the file to copy in active directory
`lang`	language, default is "en" but "fr" can be selected. "fr" option is not fully developped.
`open`	boolean, allow to lauch excell or libre office if available
`verbose`	Allow to print messages. False by default.

Details

The file name is always Data_Marteloscope_<inv_site>.xlsx and is stored in data/

`prepare_samsara` *Prepare Samsara*

Description

Write command file for launching samsara2 software and prepare plot

Usage

```
prepare_samsara(
  create_periphery = TRUE,
  create_virtual_saplings = TRUE,
  range_dbh = c(as.numeric(getOption("mart_recdbh")), 92.5),
  inv_year = as.numeric(getOption("mart_year")),
  inv_mindbh = as.numeric(getOption("mart_recdbh")),
  simulation_year_step = 1,
  memory_perc = 75,
  verbose = FALSE
)
```

Arguments

create_periphery	Creation of the periphery of the plot. TRUE by default. Must be TRUE for the first simulation, and FALSE later to speed up simulations
create_virtual_saplings	Creation of the saplings of the plot. TRUE by default. Must be TRUE for the first simulation, and FALSE later to speed up simulations
range_dbh	range of dbh for tree diameter classes.
inv_year	year of the inventory. Used to define the starting year of simulations. Value retrievedfrom inventory file.
inv_mindbh	inventory minimum dbh. Value retrieved from inventory file.
simulation_year_step	Simulation year step, value by default is 1.
memory_perc	Percentage of computer RAM affected to CAPSIS. default is 75%.
verbose	Print messages or not.

---

random_marking *Write a random marking file*

Description

Write a random marking file

Usage

```
random_marking(name = "Random", verbose = TRUE, open = FALSE)
```

Arguments

name	name of the marking. Default is "Random"
verbose	Print nice messages. TRUE by default
open	Open the file. FALSE by default

run_samsara *Run Samsara software*

Description

Run Samsara software

Usage

```
run_samsara(
  commandFile = sprintf("%s_Martelo_CommandFile.txt", getOption("mart_site")),
  combineOutputs = TRUE,
  memory_perc = 75,
  verbose = TRUE
)
```

Arguments

commandFile	Default command file to use is the one with the site name.
combineOutputs	Not used yet, if needs to combine outputs
memory_perc	75 percentage of RAM is used by default if memory > 4Gb.
verbose	print logs in terminal or not. TRUE by default

scenarios *Silviculture scenarios for users*

Description

Silviculture scenarios for users

Usage

```
scenarios
```

Format

An object of class `data.frame` with 5 rows and 2 columns.

Source

Pierre-Antoine Gaertner

scenarios_weights *Silviculture scenarios default weights for users*

Description

Silviculture scenarios default weights for users

Usage

```
scenarios_weights
```

Format

An object of class `data.frame` with 92 rows and 4 columns.

Source

Pierre-Antoine Gaertner

Species_Weight_S2 *Returns modified Species weights S2 from Silviculture Sheet for command file Returns a table with the years of intervention for each marlking group*

Description

Returns modified Species weights S2 from Silviculture Sheet for command file Returns a table with the years of intervention for each marlking group

Usage

```
Species_Weight_S2(sp)
```

Arguments

sp	species table

write_prep_samsara_cmd *Write command file for launching samsara2 software and prepare plot*

Description

Write command file for launching samsara2 software and prepare plot

Usage

```
write_prep_samsara_cmd(
  create_periphery = TRUE,
  create_virtual_saplings = TRUE,
  range_dbh = c(as.numeric(getOption("mart_recdbh")), 92.5),
  inv_year = as.numeric(getOption("mart_year")),
  inv_mindbh = as.numeric(getOption("mart_recdbh")),
  simulation_year_step = 1,
  verbose = FALSE
)
```

Arguments

create_periphery	Creation of the periphery of the plot. TRUE by default. Must be TRUE for the first simulation, and FALSE later to speed up simulations
create_virtual_saplings	Creation of the saplings of the plot. TRUE by default. Must be TRUE for the first simulation, and FALSE later to speed up simulations
range_dbh	range of dbh for tree diameter classes.
inv_year	year of the inventory. Used to define the starting year of simulations. Value retrievedfrom inventory file.
inv_mindbh	inventory minimum dbh. Value retrieved from inventory file.
simulation_year_step	Simulation year step, value by default is 1.
verbose	Print messages or not.

write_samsara_cmd *Write command file for launching samsara2 software*

Description

Write command file for launching samsara2 software

Usage

```
write_samsara_cmd(
  marking_groups,
  thinning_time,
  evolution_time,
  create_periphery = FALSE,
  create_virtual_saplings = FALSE,
  range_dbh = c(as.numeric(getOption("mart_recdbh")), 92.5),
  inv_year = as.numeric(getOption("mart_year")),
  inv_mindbh = as.numeric(getOption("mart_recdbh")),
  simulation_year_step = 1,
  silviculture = c("auto", "expert"),
  verbose = FALSE
)
```

Arguments

marking_groups	list of marking_groups to build the command file for. Under development so it use all marking_groups at this time
thinning_time	Time between management actions
evolution_time	Total duration of the simulation
create_periphery	Creation of the periphery of the plot. TRUE by default. Must be TRUE for the first simulation, and FALSE later to speed up simulations
create_virtual_saplings	Creation of the saplings of the plot. TRUE by default. Must be TRUE for the first simulation, and FALSE later to speed up simulations
range_dbh	range of dbh for tree diameter classes.
inv_year	year of the inventory. Used to define the starting year of simulations. Value retrievedfrom inventory file.
inv_mindbh	inventory minimum dbh. Value retrieved from inventory file.
simulation_year_step	Simulation year step, value by default is 1.
silviculture	Choice between "auto" and "expert", for building data/Silviculture file.
verbose	Print messages or not.

---

write_silviculture_sheet

Write Silviculture sheet for users to adapt silviculture to their needs

---

Description

Write Silviculture sheet for users to adapt silviculture to their needs

Usage

```
write_silviculture_sheet(speciestab, verbose = F, grp = "Free_Growth")
```

Arguments

speciestab	species table
verbose	Allow to print messages. False by default.
grp	Group to create the datasheet for. By default is Free_Growth

Index

∗ **datasets**
HClasses, 3
iplus_action, 4
iplus_reason, 4
mart_scales, 5
scenarios, 13
scenarios_weights, 14

build_samsa2_files, 2

find_marking, 3

HClasses, 3

iplus_action, 4
iplus_reason, 4

mart_scales, 5
martelo_maps, 5
martelo_report, 6
martelosim, 7
martelosim-package *(*martelosim*)*, 7
martelosim_evol, 7
martelosim_hist, 8
martelosim_map, 8
martelosim_options, 9
martelosim_pixelmap, 10
martheme, 10

new_inventory, 11

prepare_samsara, 11

random_marking, 12
run_samsara, 13

scenarios, 13
scenarios_weights, 14
Species_Weight_S2, 14

write_prep_samsara_cmd, 15
write_samsara_cmd, 15
write_silviculture_sheet, 16