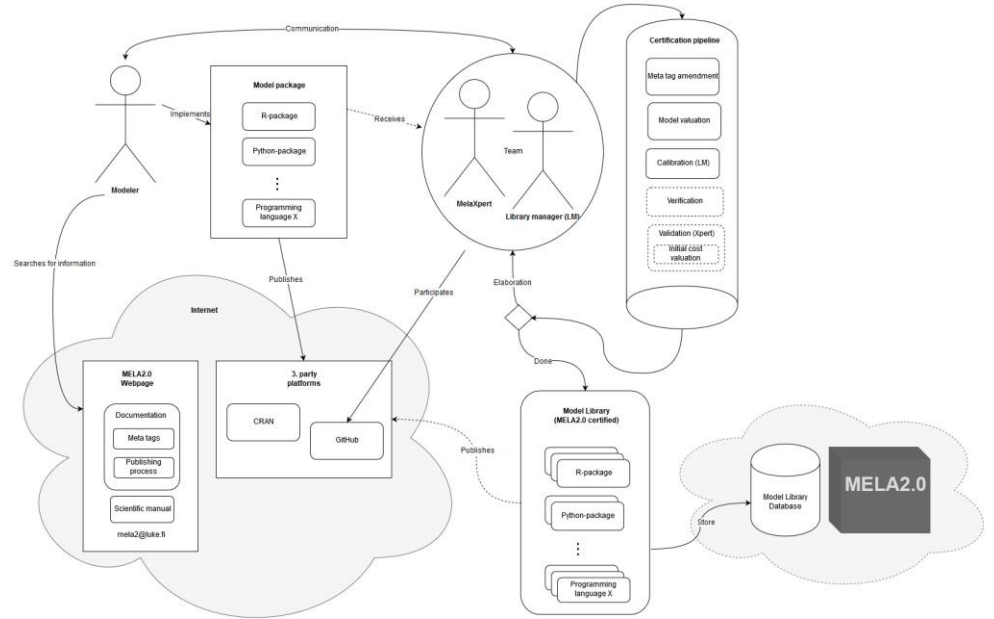


# MELA2.0

A draft for the Model Function Library  
Version 09/09/2019

# Purpose of the presentation

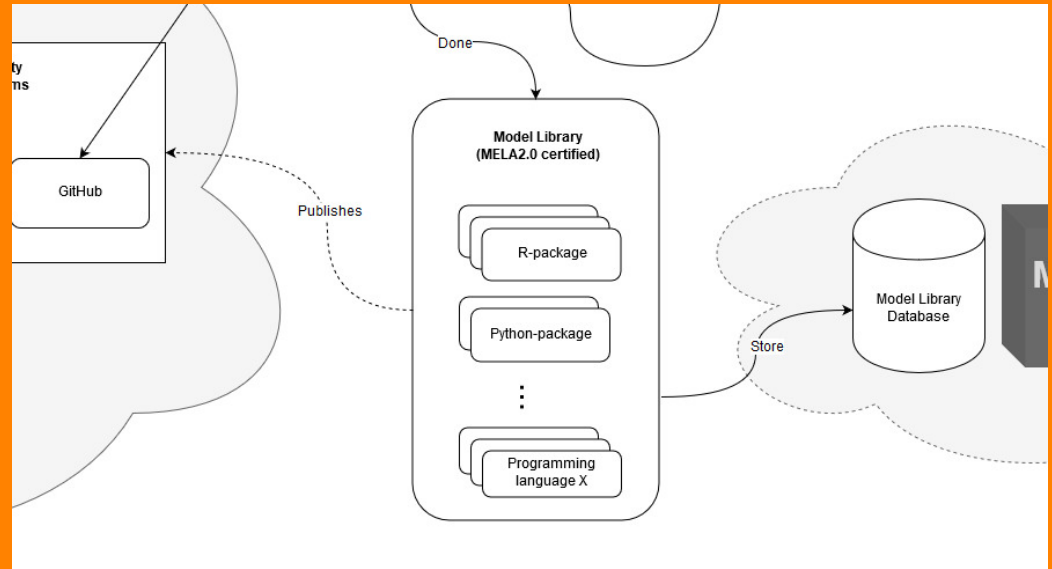
- Model Function Library, what is it?
- Modeler, what does she do?
- MELA Team, how do they help?
- Social coding, what does it stand for?
- Activate conversation and collect feedback



MELA 2.0 Draft 09/09/2019

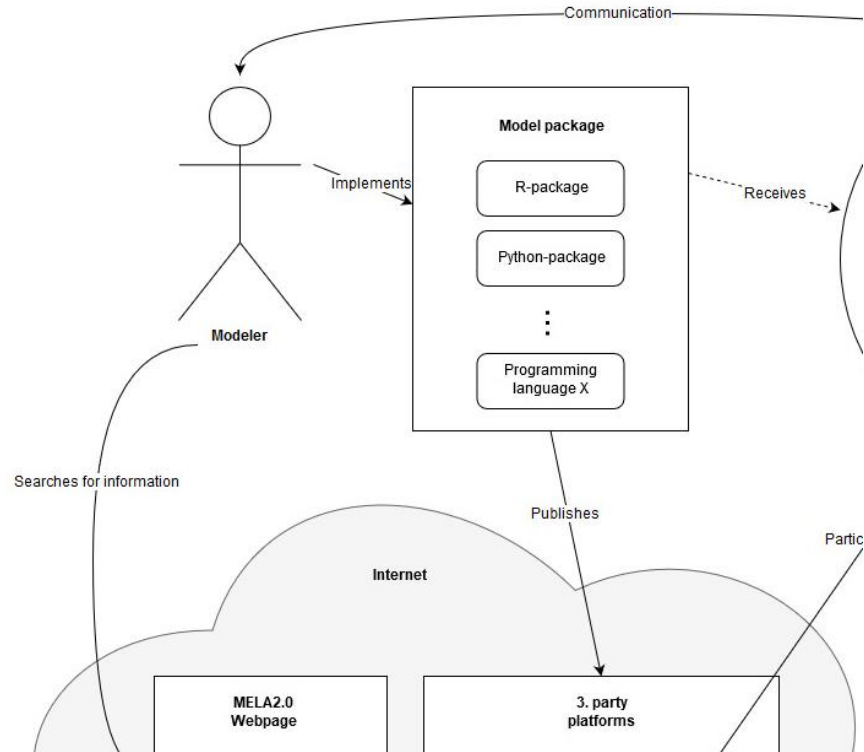
# Open Model Function Library

- Scientific unit of the MELA2.0 system
- Place for the Model Functions
- Display window for scientific publications on model functions
- A link between the MELA2.0 system and the content provider



# The Modeler

- You are the modeler!
- Modelers provide the scientific contents of the MELA system
- Visibility and impact for the model functions and modelers through the MELA 2.0 system and its use
- Possibility to use / link own model functions when using the simulator



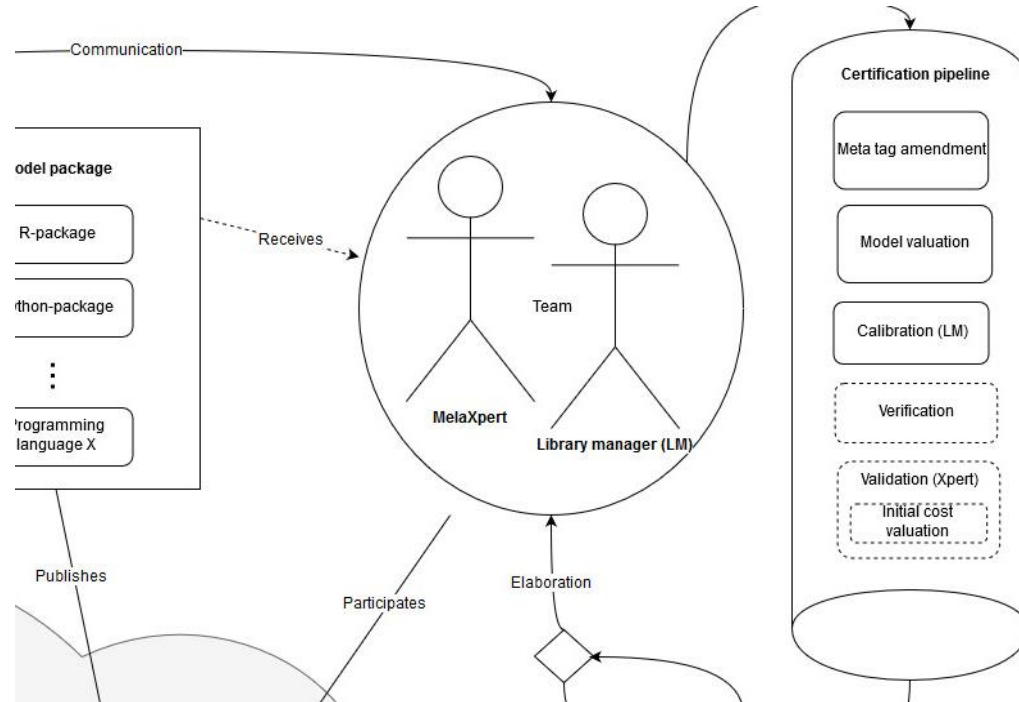
# Meta data

- Building bridge between the model function library and the simulator
- Describes the conditions where a model function is applicable
- Provides reference information for modelers' credits and merits
- "The use-case information for a model"

```
1 #' Volume growth percent for a spruce
2 #'
3 #' @references Nyyssönen, A. & Mielikäinen, K. 1987. Metsikön kasvun a
4 #' Summary: Estimation of stand increment. Acta Forestalia Fennica
5 #' \url{https://silvafennica.fi/issue//issue/2220}
6 #'
7 #' @keywords volume growth pine
8 #'
9 #' @level stand
10 #' @data xxxx,xxxx
11 #'
12 #' @param age years
13 #' @param diameter mean diameter (median of basal area)
14 #' @param volume stem volume (including bark)
15 #' @param fertilityClass site type
16 #'
17 #' @unit age a
18 #' @unit diameter cm
19 #' @unit volume m3/ha
20 #'
21 #' @check species 2
22 #' @check diameter >0.0
23 #'
24 #' @return p annual volume-increment percent
25 #' @retvalcheck ...palautusarvon väli...
26 #'
27 #' @export
28 GrowthPercentSpruceD <-
29 function(age, volume, diameter, fertilityClass) {
30   a = 8.839
31   b1 = -1.2749
32   b2 = -0.5948
33   b3 = 0.00309
34   b4 = -0.1193
35   b5 = -0.0006095
36   b6 = 0.1009
37
38   isf = ifelse(fertilityClass <= 2, 1.0, 0.0)
39
40   lnp = a + b1*log(age) + b2*log(volume) + b3*(log(age)*log(volume))^2
41   | b4*log(age)*(volume^2)/100000 + b5*log(diameter)^5 + b6*isf
42   p = exp(lnp)
43
44   return(p)
45 }
```

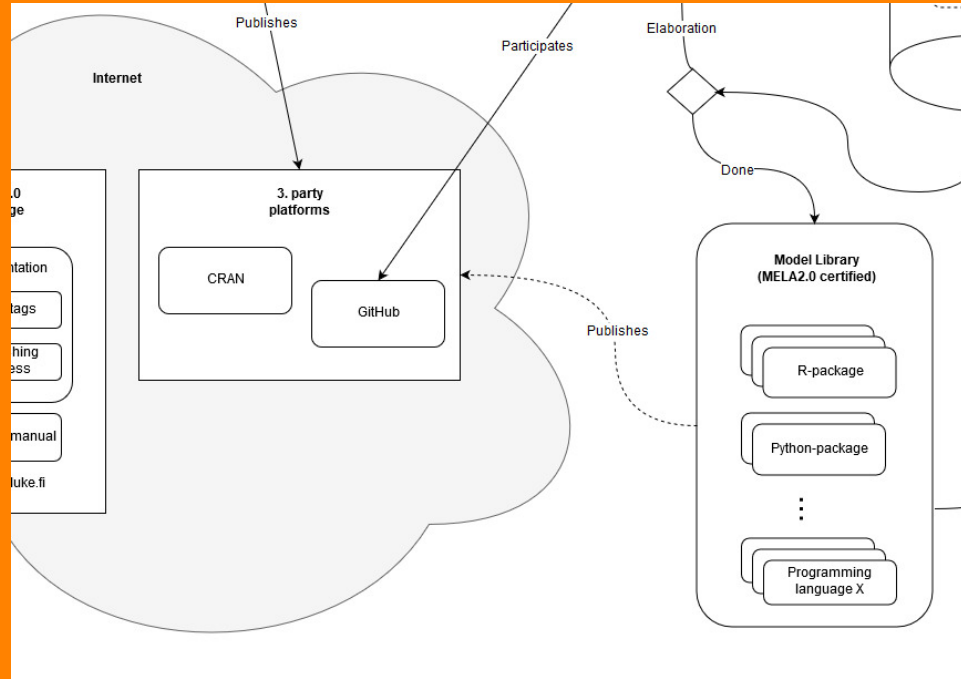
# The MELA Team

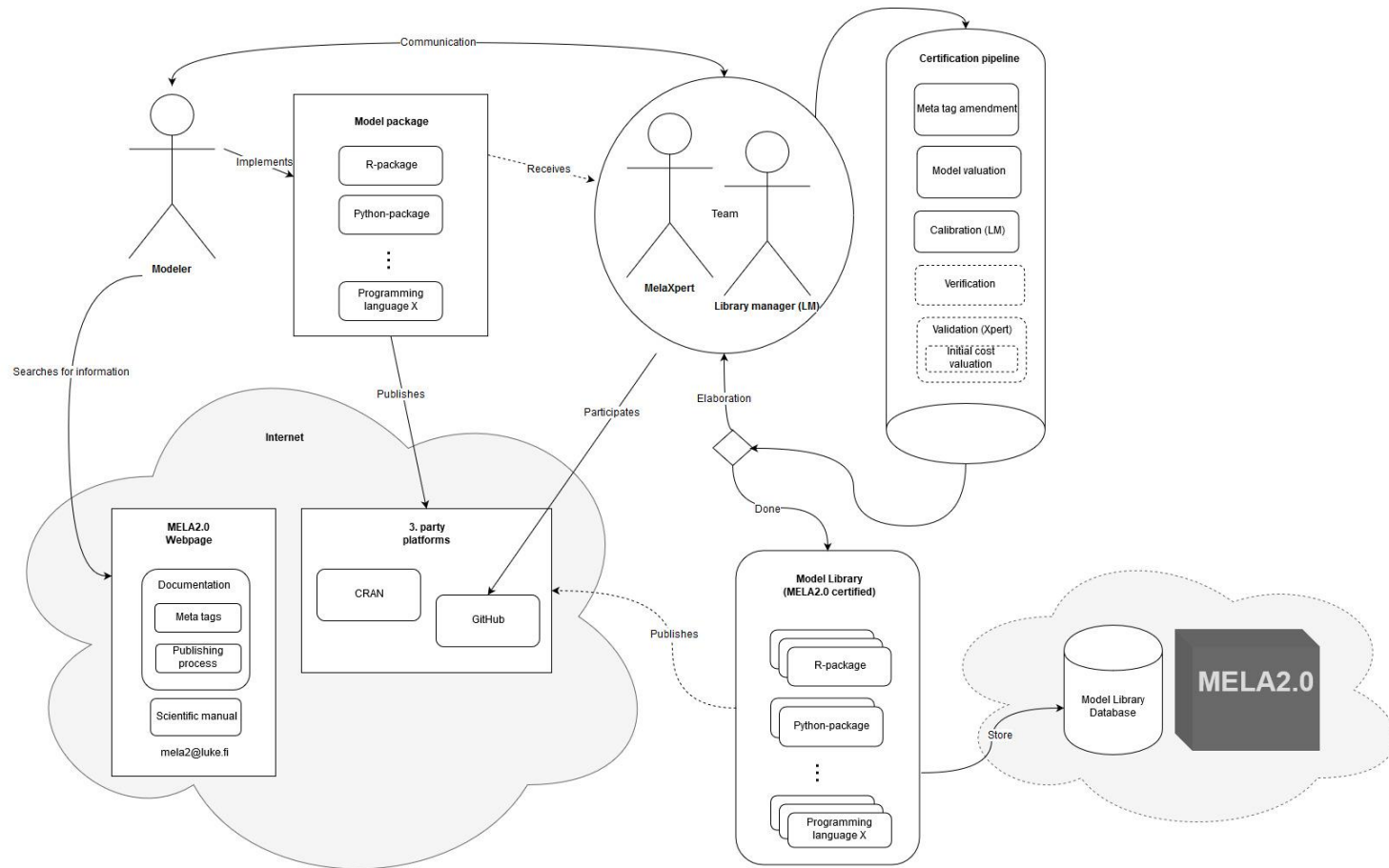
- Supports the modeler in “building the bridge” between the simulator and the model function library
  - verification
  - validation
- Integrates and certifies model function packages
- Archives model function packages



# Social coding

- Connects researchers from different disciplines
- Enhances visibility and impact of your research
- Improves maintenance of the system







Thank you!



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