



BIODT
biodiversitydigitaltwin

School & Hackaton

March 3rd – March 7th
Officine Cantelmo, Lecce IT

Developement of Graphical User Interface for Interaction with Digital Twins

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Funded by
the European Union



User Experience



Development Efficiency



Integration with the Current Ecosystem



Community & Documentation



License



Performance



Maintenance



[Website maintenance](#) by [Deesign Graphics](#)



[Business Task list](#) by [Kawalan Studio](#) on [IconScout](#)



Interactive Application



Possibility for Tech Savvy Ecologist to contribute



Light Data Processing on the Backend



Easy Execution of Jobs on HPC



Open Source



Modularity for Multiple pDTs



Map visualisation

Shiny



Pros

Easy to prototype
Flexible R backend
Modular
Possibility to call
different services

App feels slow
Single threaded
Difficult to add
custom
components

Cons



Allows for proper folder structure



Modular thanks to Box and Shiny modules



Support for Sass, GitHub Actions, JavaScript



Proper Application Testing



Open Source



[Developer Team](#) by [Deesign Graphics](#)



Namespace Isolation



Reusability



Self-Containment



Nesting Support



Scalability

Module_ui()

```
myModule_UI <- function(id) {  
  ns <- NS(id)  
  tagList(  
    sliderInput(ns("slider"), "Choose a value",  
      min = 0, max = 100, value = 50),  
    textOutput(ns("output"))  
  )  
}
```

Server_ui()

```
myModule_Server <- function(id) {  
  moduleServer(id, function(input, output,  
    session) {  
    output$output <- renderText({ paste("You  
selected:", input$slider) })  
  })  
}
```

Module_ui()

```
myModule_UI <- function(id) {  
  ns <- NS(id)  
  tagList(  
    sliderInput(  
      ns("slider"),  
      "Choose a value",  
      min = 0,  
      max = 100,  
      value = 50),  
    textOutput(  
      ns("output")  
    )  
  )  
}
```

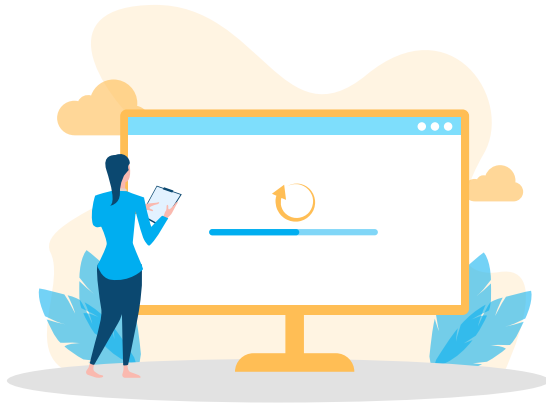
Server_ui()

```
myModule_Server <- function(id) {  
  moduleServer(id, function(input, output, session) {  
    output$output <- renderText( paste("You selected:", input$slider) )  
  })  
}
```

App.R

```
ui <- fluidPage(  
  myModule_UI("module1")  
)  
  
server <- function(input, output, session) {  
  myModule_Server("module1")  
}  
  
shinyApp(ui, server)
```

- 💧 We use git to track changes
- 💧 Git branches for issues
- 💧 Common landing page and theme
- 💧 Common elements such as waiting, translation (in development)
- 💧 Separate files for each pDT thanks to box and Shiny modules
- 💧 Some developers develop the app independently and import it when finished

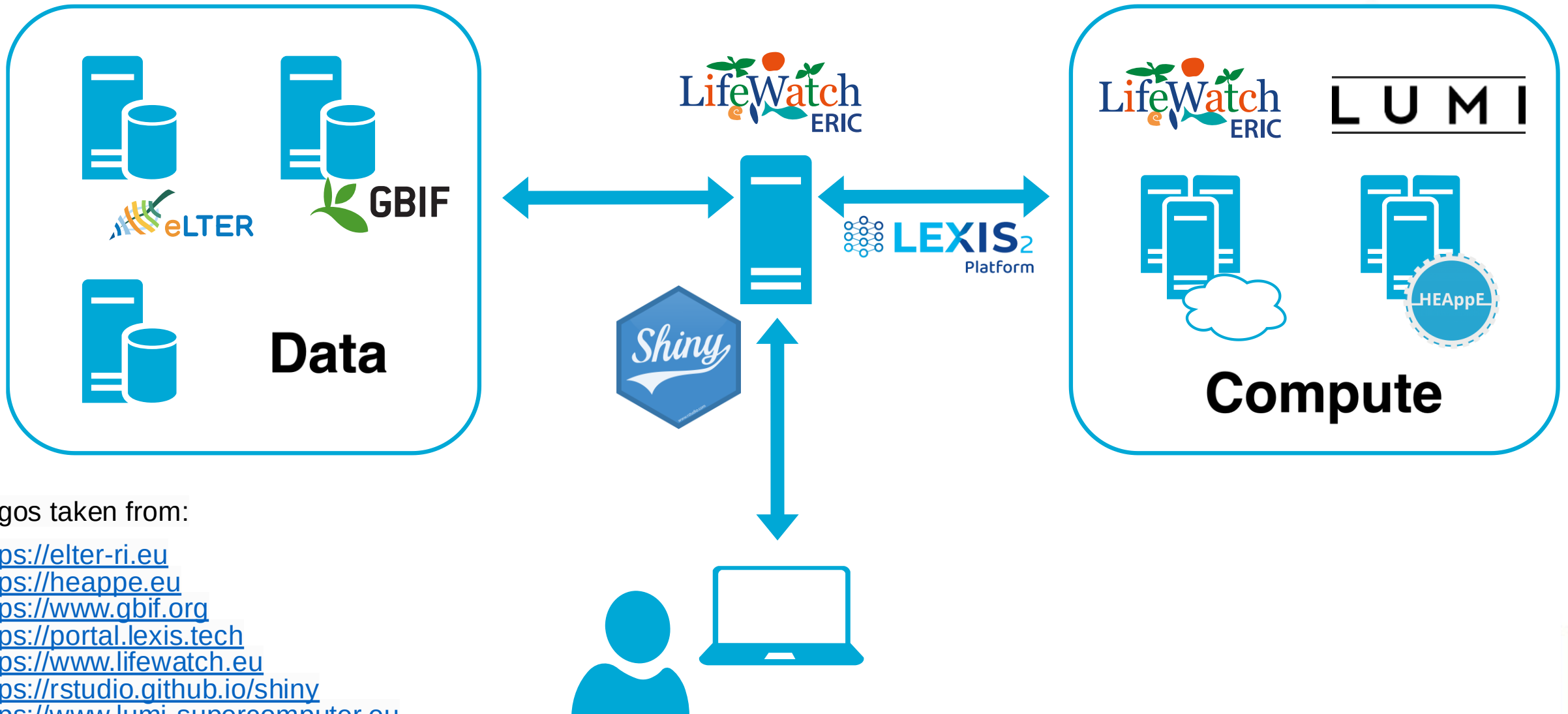


[processing](#) by [Delesign Graphics](#) on [IconScout](#)



[design](#) by [Delesign Graphics](#)

S&H



Logos taken from:

<https://elter-ri.eu>
<https://heappe.eu>
<https://www.gbif.org>
<https://portal.lexis.tech>
<https://www.lifewatch.eu>
<https://rstudio.github.io/shiny>
<https://www.lumi-supercomputer.eu>

Questions?
Next hands-on



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