



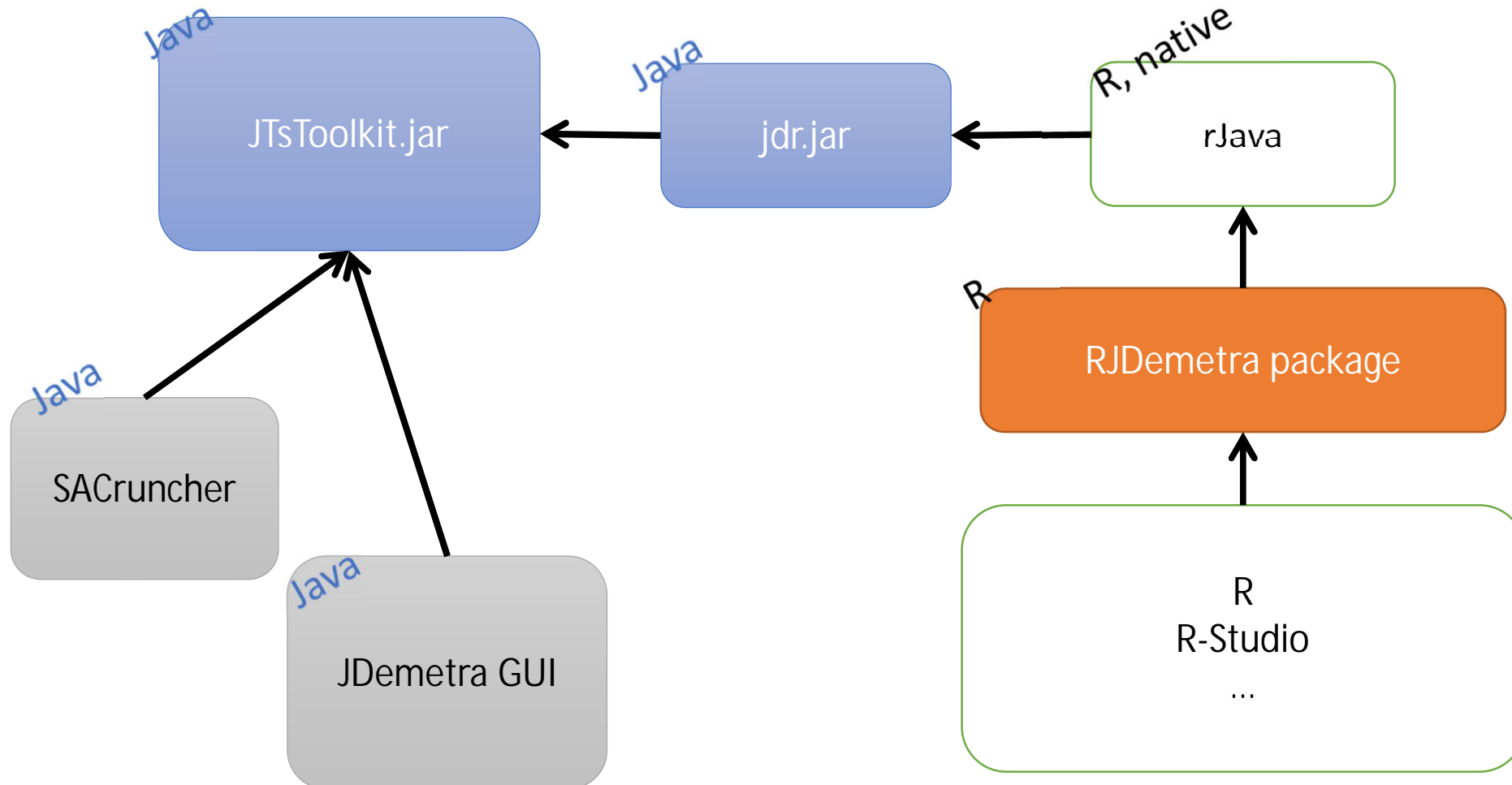
JD+ and R

ESTP Training

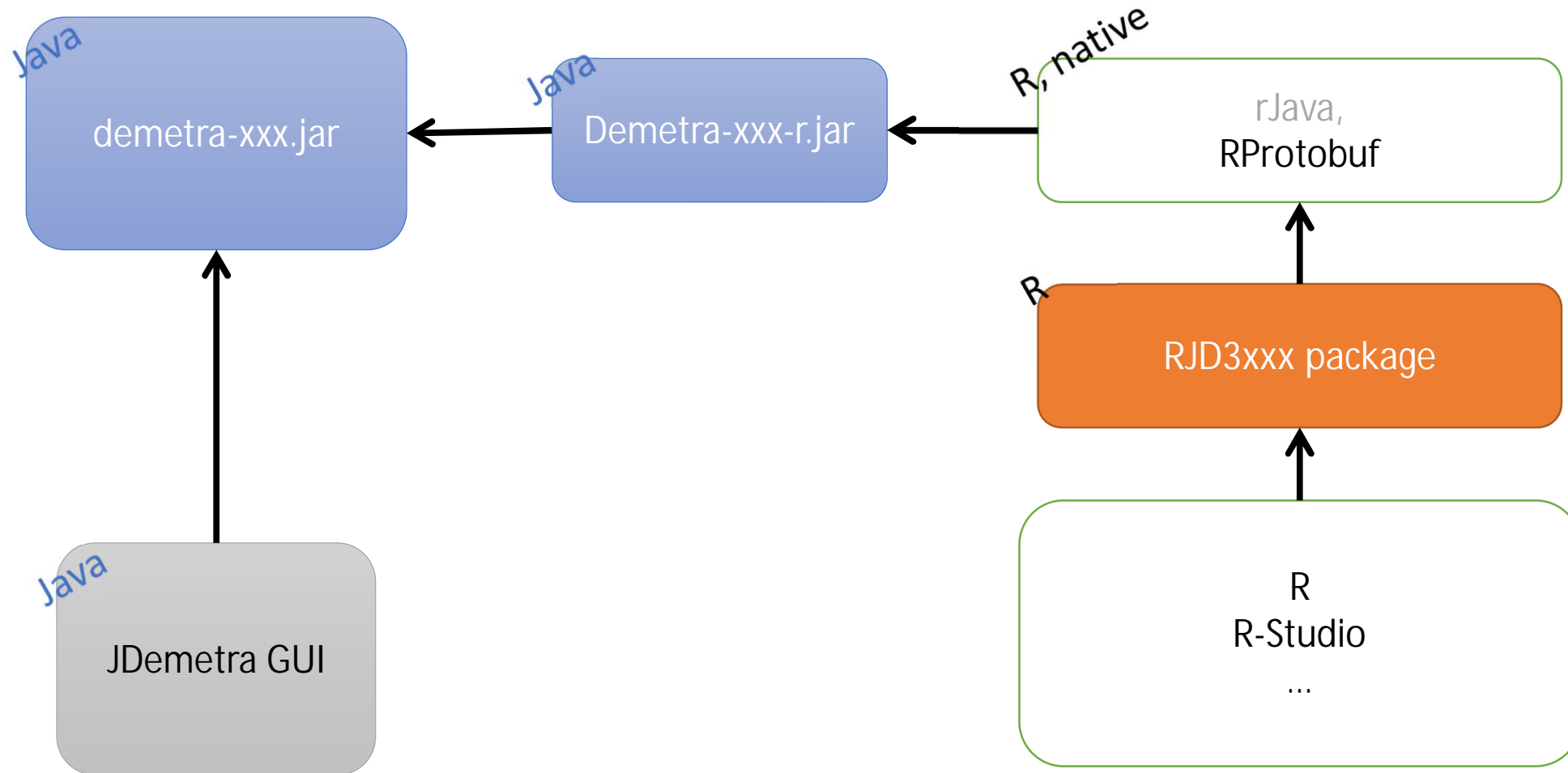
1. Main requirements

- RJDemetra
 - Java runtime (≥ 11)
 - R ($\geq 3.1.1$)
 - rJava ($\geq 0.9-8$)
- RJDemetra3
 - Java runtime (≥ 17.0)
 - R ($\geq 3.6.0$)
 - rJava ($\geq 1.0-6$),
 - RProtoBuf ($\geq 0.4.17$)

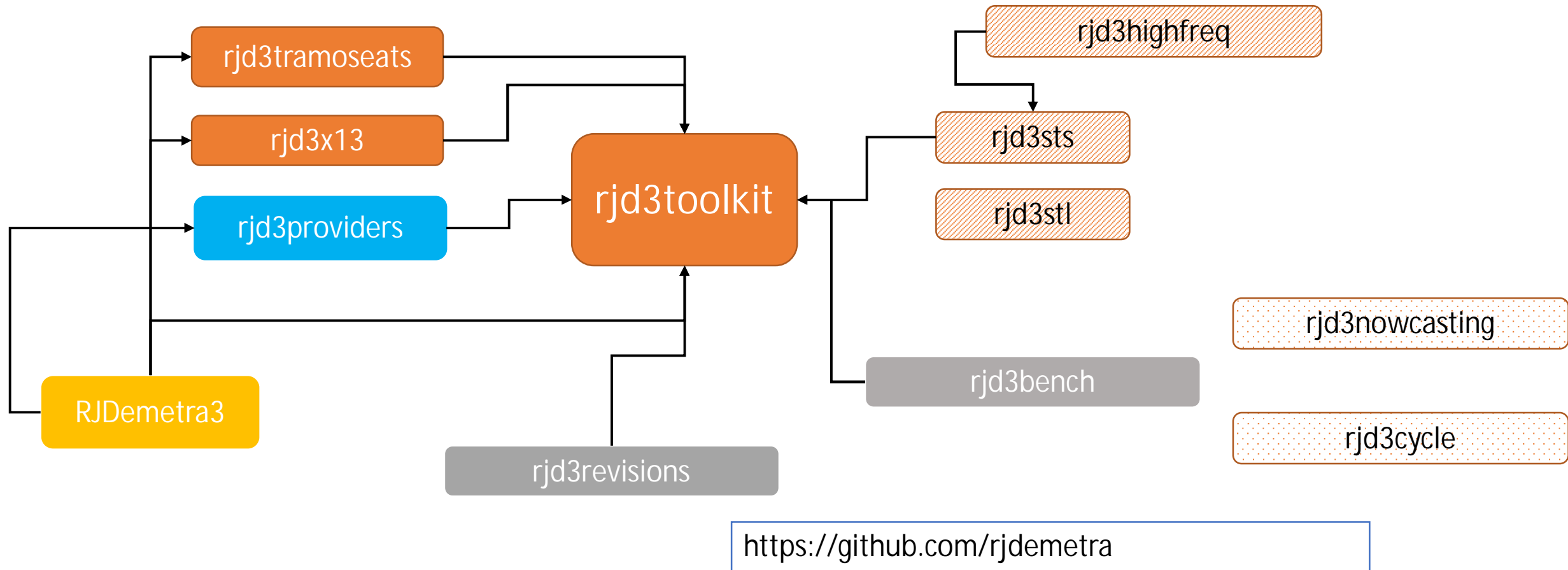
2. Technical design (Rjdemetra)



3. Technical design (Rjdemetra3)



4. Rjdemetra3: Overview



Design similar to the Java libraries !


17-19/10/2023

CONTRACTORS ORGANISING SOME OF THE COURSES ARE
ACTING UNDER A FRAMEWORK CONTRACT CONCLUDED WITH
THE COMMISSION

rjd3tramoseats





inst

Proto files

 tramoseats.proto

Java package

R files

 demetra-tramoseats-api-1.0.0-SNAPSHOT.jar
 demetra-tramoseats-core-1.0.0-SNAPSHOT.jar
 demetra-tramoseats-io-1.0.0-SNAPSHOT.jar
 demetra-tramoseats-r-1.0.0-SNAPSHOT.jar

```
.onLoad <- function(libname, pkgname) {  
  result <- .jpackage(pkgname, lib.loc=libname)  
  if (!result) stop("Loading java packages failed")  
  
  proto.dir <- system.file("proto", package = pkgname)  
  readProtoFiles2(protoPath = proto.dir)  
}
```

Description

Depends:
R (>= 3.6.0),
Imports:
rJava (>= 1.0-6),
RProtoBuf (>= 0.4.17),
rjd3tools (>= 0.2.0),
rjd3modelling (>= 0.2.0),
rjd3sa (>= 0.2.0)

5. Objectives of R packages

- High-level functions with most common results
- Many low-level functions
 - Advanced users
 - Research
 - Training
 - Additional tools

6. Installing the packages

- If need be, referencing the correct java runtime (≥ 17.0)

A screenshot of an R console window. The title bar shows 'R 4.1.3 · C:/ESTP/estp2023/'. The command prompt shows the command `> usethis::edit_r_environ()` being entered.

```
R 4.1.3 · C:/ESTP/estp2023/
> usethis::edit_r_environ()
```

- Set your JAVA_HOME variable (tip: use the jre provided with JD+)

A screenshot of the .Renviron file in RStudio. The title bar shows several open files: 'seasonality.R', 'td.R', 'tdpeaks.R', 'seats-amb.R', and '.Renviron*'. The content of the file shows the JAVA_HOME variable being set to a specific path.

```
seasonality.R × td.R × tdpeaks.R × seats-amb.R × .Renviron* ×
JAVA_HOME='C:/LocalData/DEV/SOFTWARE/JD+/3.1.1/nbdemetra/jdk-17.0.8.1+1-jre'
```

- Install the various packages (internet access needed)
 - `remotes::install_github("rjdemetra/rjd3tramoseats", "main", INSTALL_opts='-no-multiarch')`...

7. Examples

- Reading Excel files (JD+-like) and detecting errors

```
rjd3providers::set_spreadsheet_paths('./Data')
print(rjd3providers::spreadsheet_content("belgium.xlsx"))

indprod<-rjd3providers::spreadsheet_data('belgium.xlsx', 1)
plot(indprod$series$`Manufacture of textiles`$data, col='blue')

err<-lapply(indprod$series, function(z)rjd3tramoseats::terror(z$data, 'tr1', nback=6))
```

- Refreshing a workspace

```
jws<-rjdemetra3::jws_load(system.file('workspaces', 'test.xml', package='rjdemetra3'))
ws<-rjdemetra3::read_workspace(jws)
jws2<-rjdemetra3::jws_make_copy(jws)
rjd3providers::set_spreadsheet_paths("c:/localdata/data/excel/new")
rjdemetra3::jws_refresh(jws2, 'Complete')
ws2<-rjdemetra3::read_workspace(jws2)

sa1<-ws$processing$`SAProcessing-1`$`Exports
France`
sa2<-ws2$processing$`SAProcessing-1`$`Exports
France`
ts.plot(ts.union(sa1$results$final$sa$data, sa2$results$final$sa$data), col=c('red', 'blue'))
print(window(sa2$results$final$series$data-sa1$results$final$series$data, start=2018))
```

8. Final remarks

- Most features provided in the Java libraries can be called from R
- Most tasks can be automated
- Many additional tools could be developed in R