Data Export – Request

base model: models/Plot.mdl

final model: models/Request.mdl

Data export – Requests

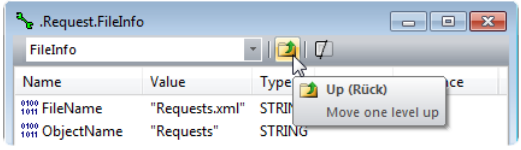
- To export one or more real variables from any analysis to an external file is called "Request"
- The basic template used for this is **TRequest**, exporting real variables over time
- The default export format is xml

Requests could be a base for evaluating the results of a simulation.

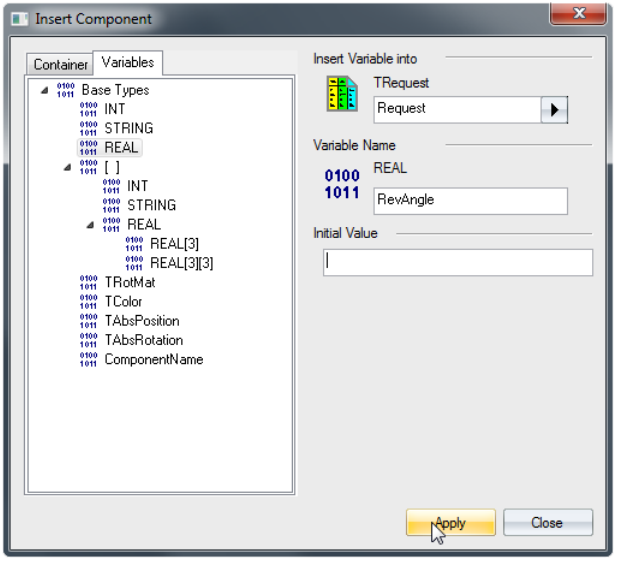
1. Insert one instance of *Utilities* → *TRequest* into the Model
2. Set the name "Request" and click on OK
3. Open the "Component View" of Request
4. Double-click the component FileInfo, which contains several variables and options, e. g.
   - *FileName* is the filename of the exported file
   - *ObjectName* is the name of the table, where all exported variables of the current **TRequest** instance will be inserted
   - You may have more than one instance of **TRequest** insert data to the same file, which may write in the same or in different tables (corresponding to the given *ObjectName*)

- *NumberFormat* Contains the format and precision for the data export
- *StartTime* Contains the time at which the export starts, i. e. if *TIME* is smaller than *StartTime* there will be no export

5. We do not change anything at the *FileInfo* for the moment
6. We go up/back to the Request; to navigate "up" within the "Component View" windows you can use the button



7. Press F6 while the "Component View" of Request is active
8. In the opened dialog switch two the tab Variables and select *REAL*, which stands for a 1-dimensional real number
9. Name the variable "RevAngle" and click on Apply


Insert Component
Container
Variables
Base Types
INT
STRING
REAL
[ ]
INT
STRING
REAL
REAL[3]
REAL[3][3]
TRotMat
TColor
TAbsPosition
TAbsRotation
ComponentName
Insert Variable into
TRequest
Request
Variable Name
REAL
RevAngle
Initial Value
Apply
Close

- In the same manner also vectors of *REAL*-variables may be exported
- We will export the variable *Cylinder.Pos*, which is the position of the `Cylinder` and is a vector of length 3

10. Press F6 switch to the Variables tab, select the data type *REAL[3]* and name the variable "`CylinderPos`"

- The newly inserted variables still have the zero values
- We have to assign the values of the model variables, which we want to use for the export:

11. Double-click on the variable *RevAngle*, delete the zero in the box and insert the assignment `JointRevolute1.Rev`
12. Double-click on the variable *CylinderPos* and change the assignment to `Cylinder.Pos`

- Each task has a switch to activate or deactivate outputs including the export of **TRequest**
- The switch is set using the variable *WriteOutputs*

13. Double click on Integration at the "Task Tree"
14. Open the variable *Batch.Integration.WriteOutputs* in the "Component View" window by double-click and set it to "ON"
15. Now you can run Batch
16. After the Integration task the file "Request.xml" is written to the current model folder
17. You can open it with any text editor and it will have the desired content:

```
<?xml version="1.0" encoding="iso-8859-1"?>
<IFM:data name="alaska" xmlns:IFM="http://www.ifm-chemnitz.de">
<!-- Fri Jan 12 10:31:14 2018 -->
<TABLE name="Requests" type="REAL" cols="5"
       head="␣'TIME'␣'RevAngle'␣'CylinderPos[1]'␣'CylinderPos[2]'␣'
           CylinderPos[3]'␣"
       units="␣'s'␣'-'␣'-'␣'-'␣'-'␣'-'␣">
        0  0.785398  0  0.353553  1.14645
        0.01  0.784925  0  0.353386  1.14628
       ....
        10  -0.0385154  0  -0.0192529  1.00037
</TABLE>
</IFM:data>
```