GeneFisher-P: Variations of GeneFisher as Processes in Bio-jETI

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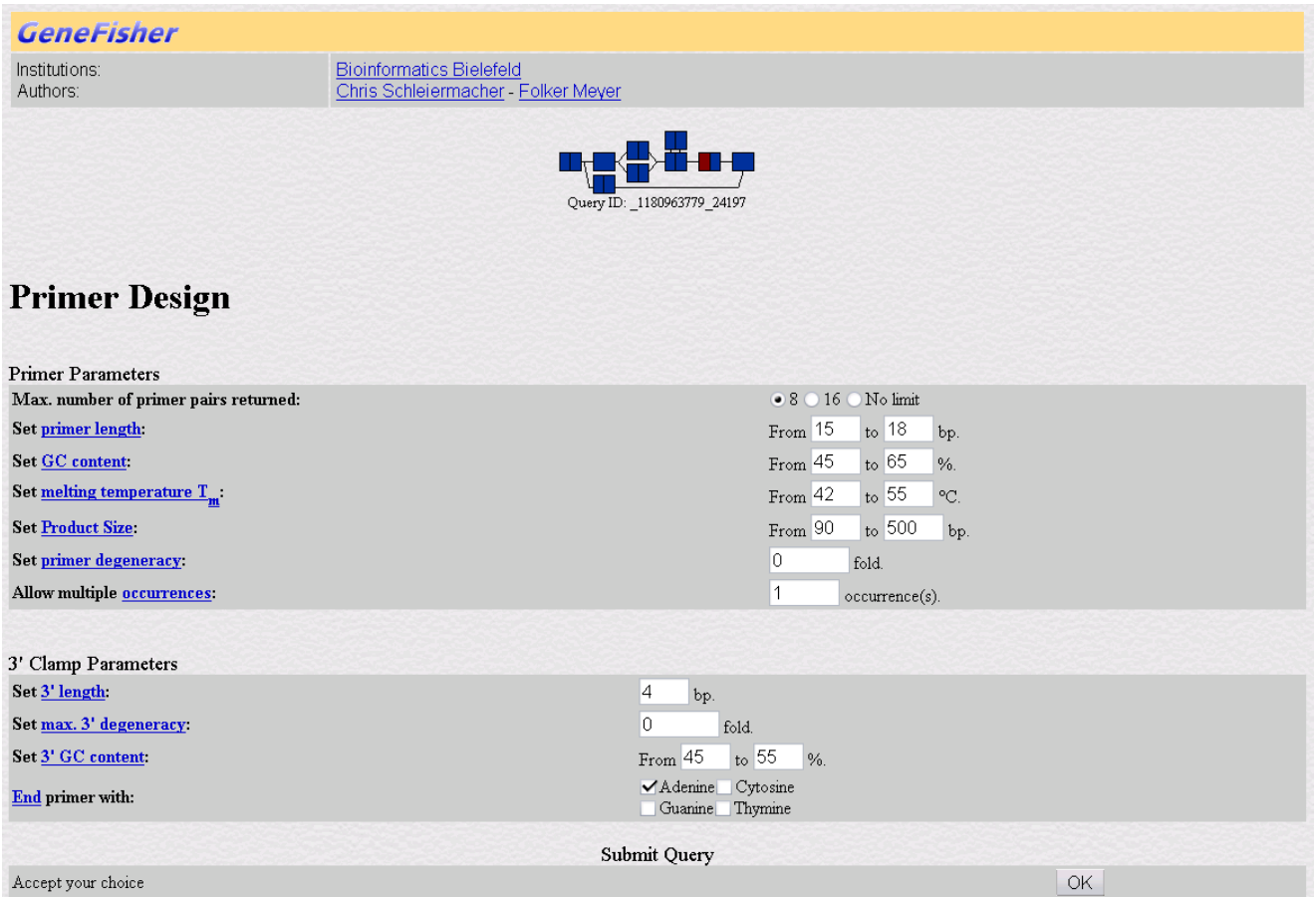
Outline

1. The GeneFisher web application(s)
2. Basic GeneFisher-P
3. Variations of GeneFisher-P
4. Conclusions

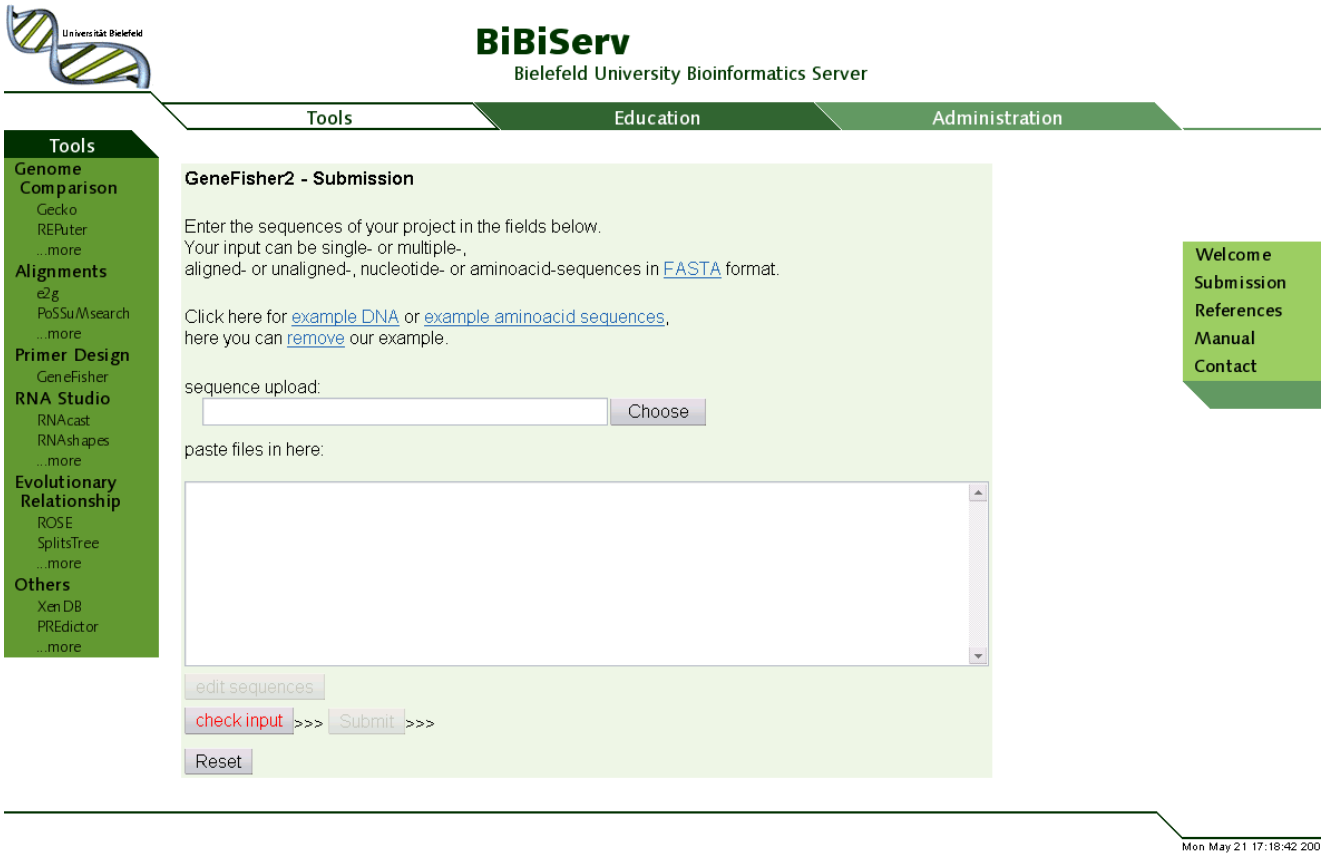
The GeneFisher web application(s)

GeneFisher (1996): a web application for interactive PCR primer design.



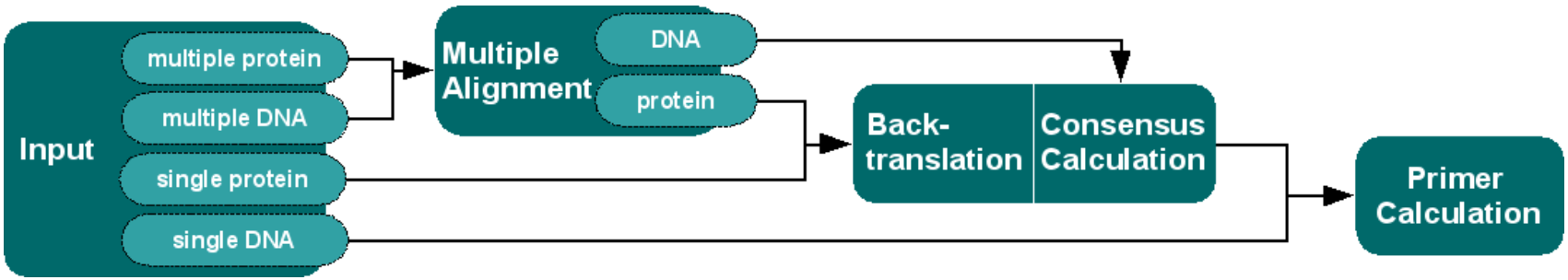
The GeneFisher web application(s)

GeneFisher2 (2006): AJAX-based reimplementation of GeneFisher.



GeneFisher: Process and Components

GeneFisher logical process:



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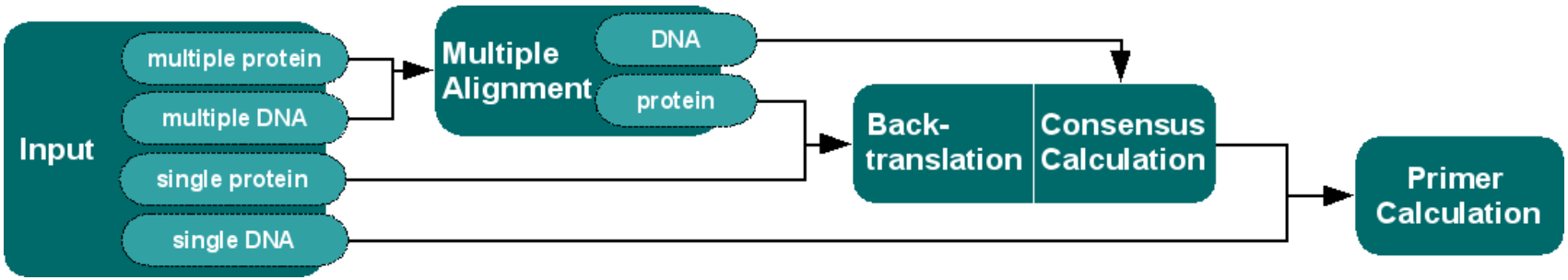
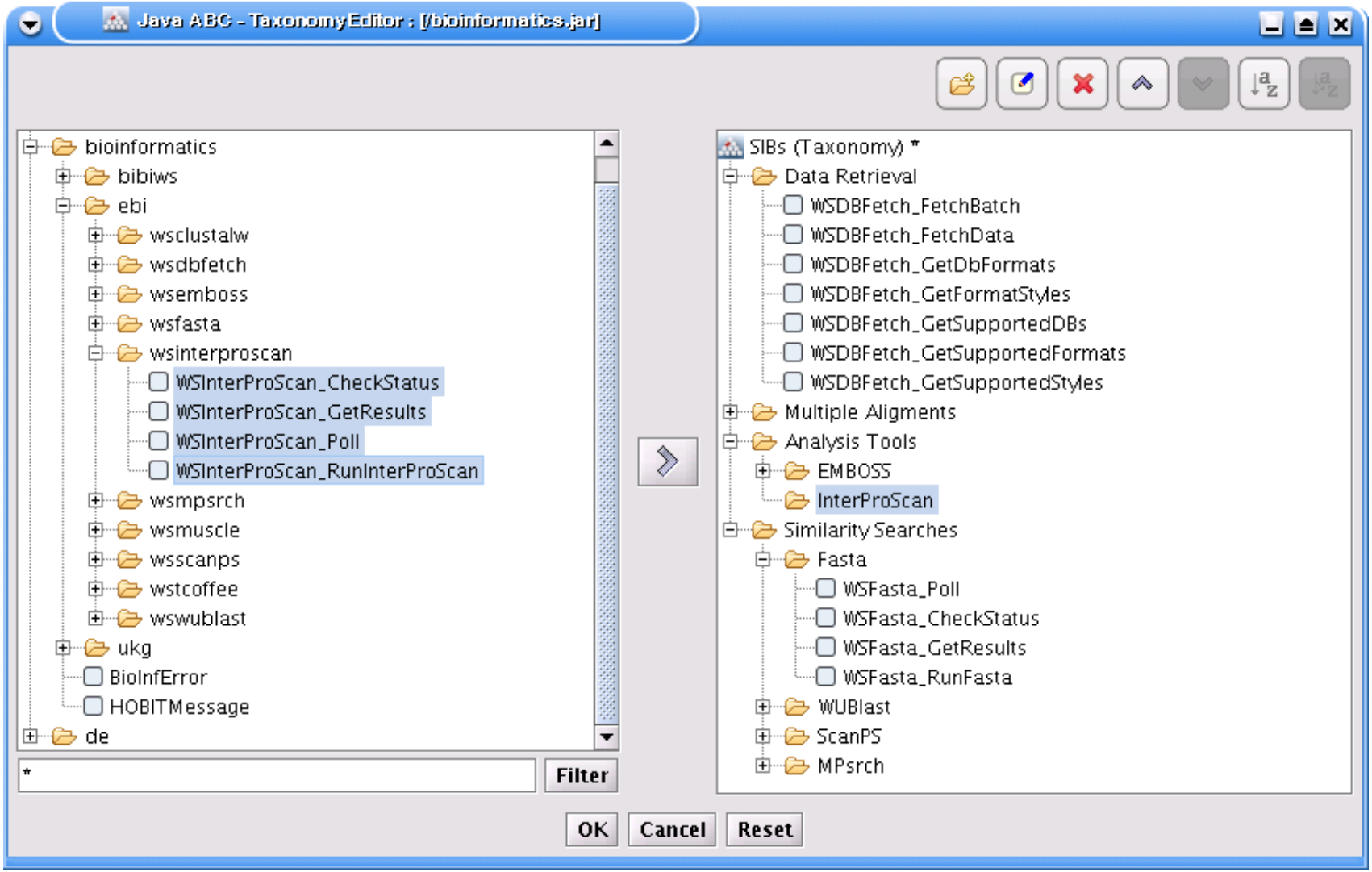


(SIBs for) the required services at BiBiServ:

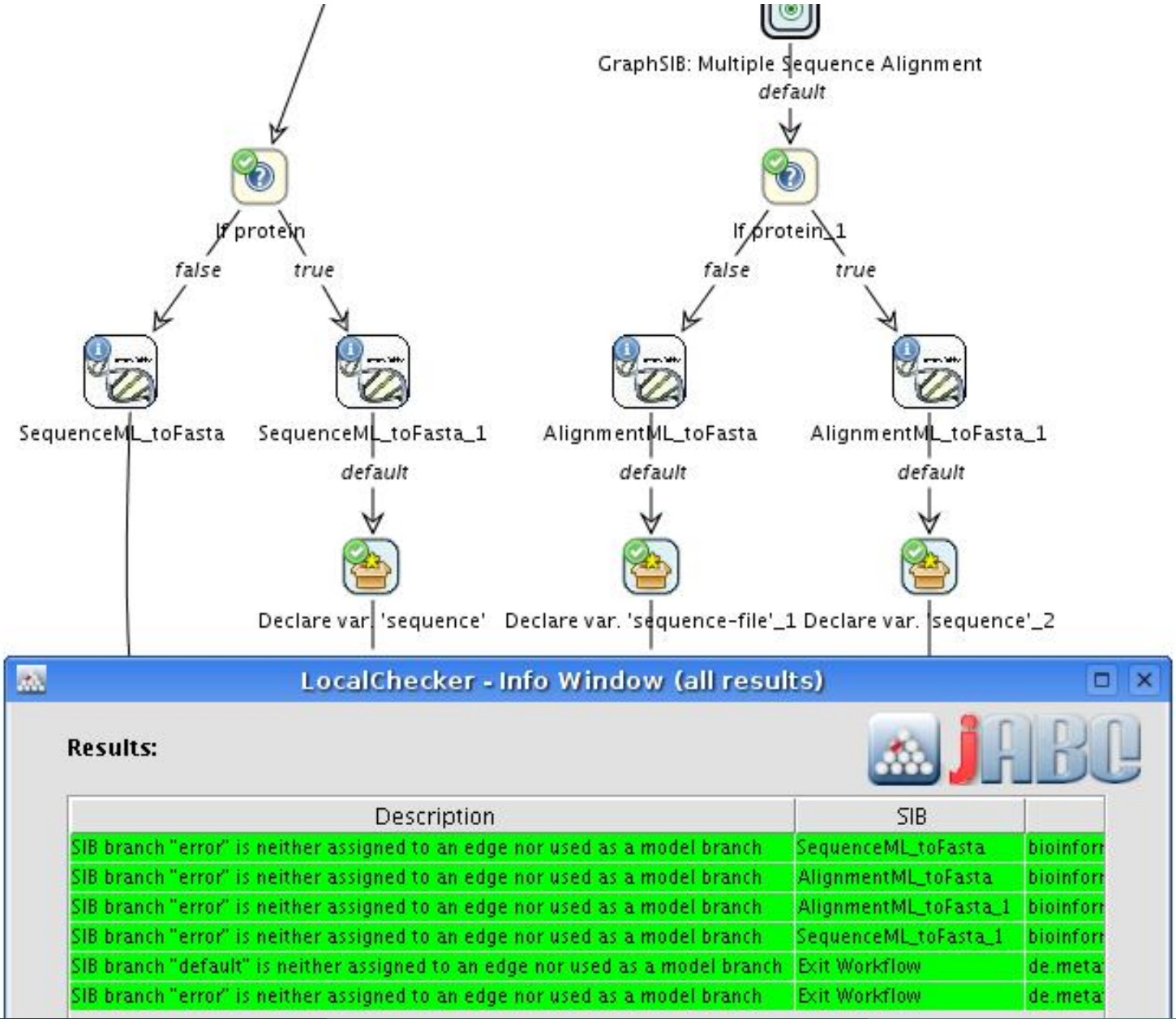
GeneFisher-P: Basic Version

[external]

GeneFisher-P: Component Taxonomies



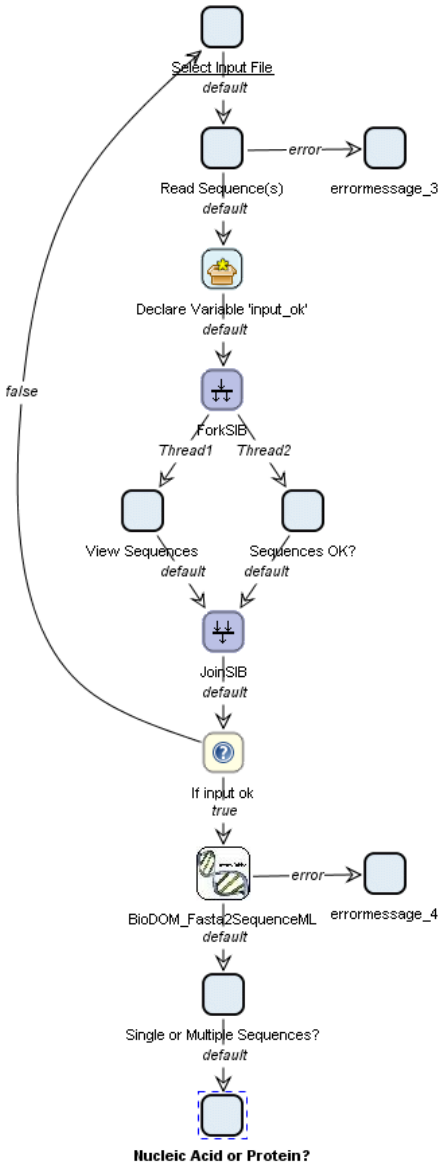
GeneFisher-P: Local Checking



GeneFisher-P: Model Checking (1)

Current atomic propositions:

errormessage_3 = [error]
errormessage_4 = [error]
Read Sequence(s) = []
BioDOM_Fasta2SequenceML = [remote]
Select Input File = [inputselection]
Single or Multiple Sequences? = []
Nucleic Acid or Protein? = []
Sequences OK? = []
If input ok = [inputcheck]
ForkSIB = []
JoinSIB = []
Declare Variable 'input_ok' = []
View Sequences = []

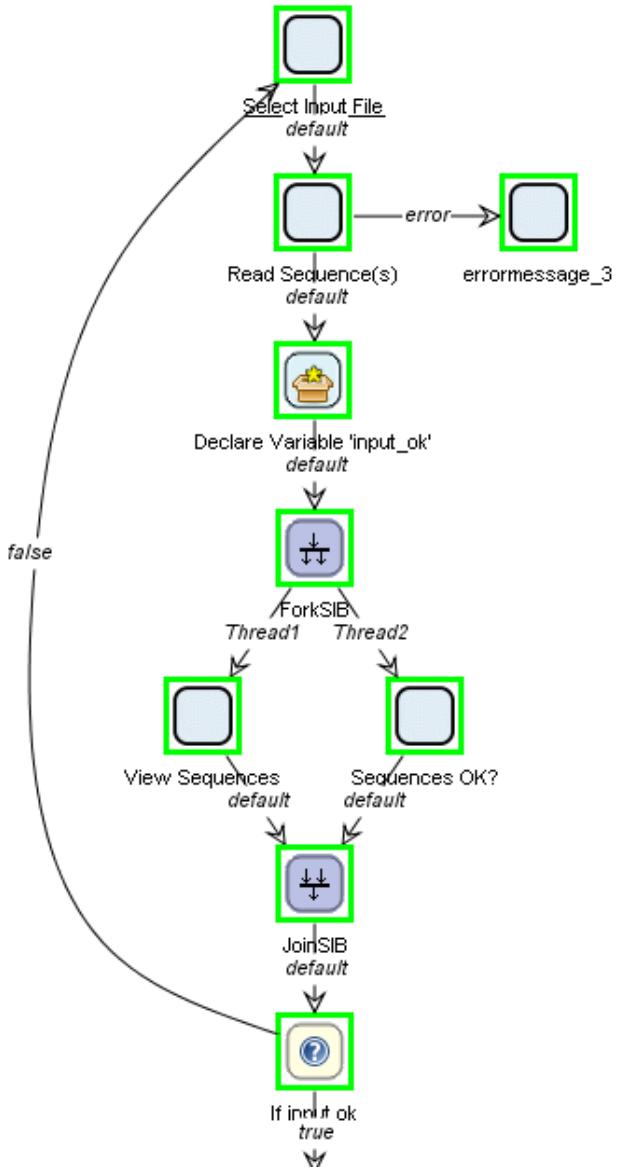


GeneFisher-P: Model Checking (2)

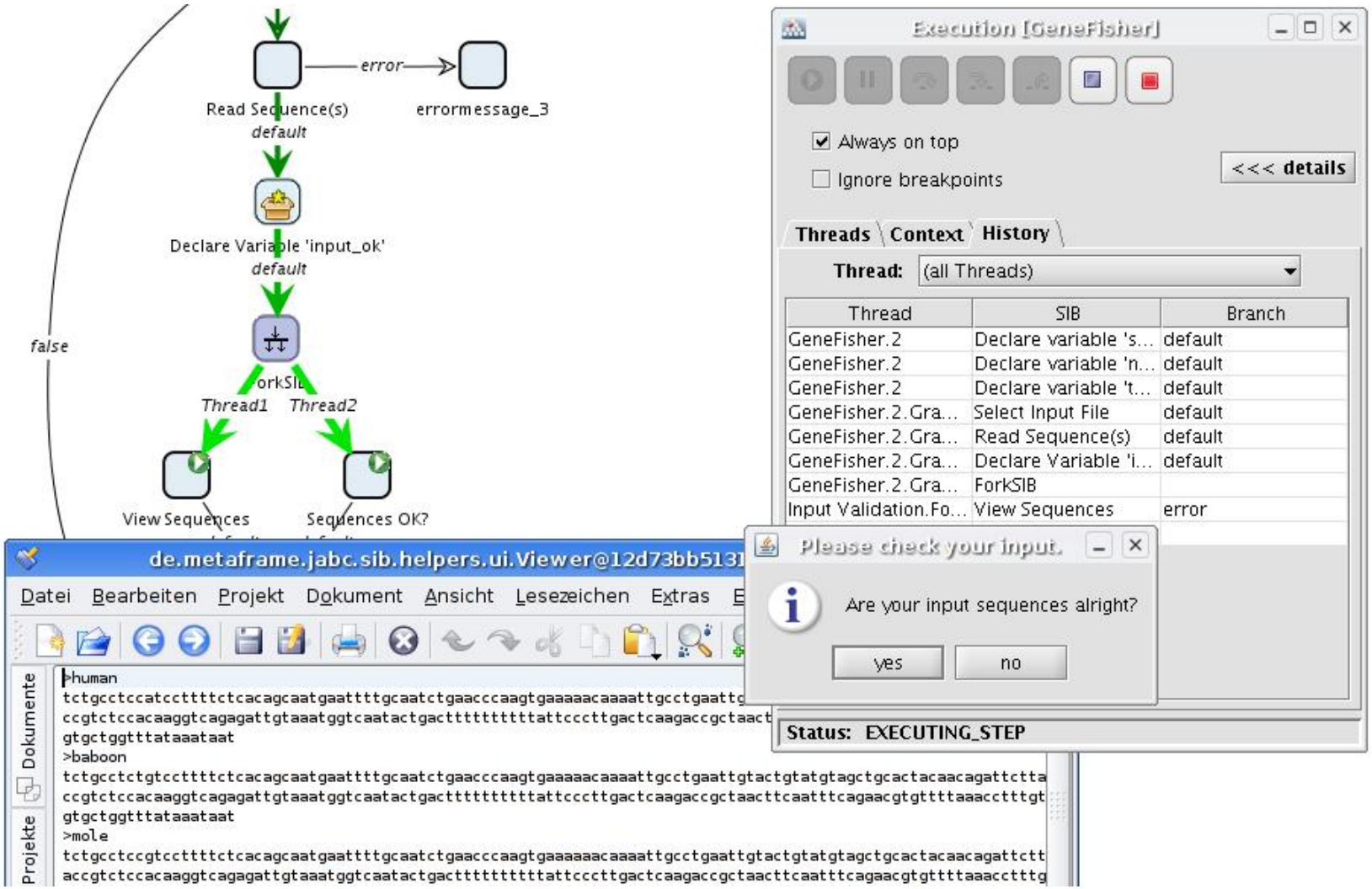
Natural language:
"No remote service is invoked before the input is checked."

Comutation Tree Logic (CTL):
$AWU(\neg remote, inputcheck)$

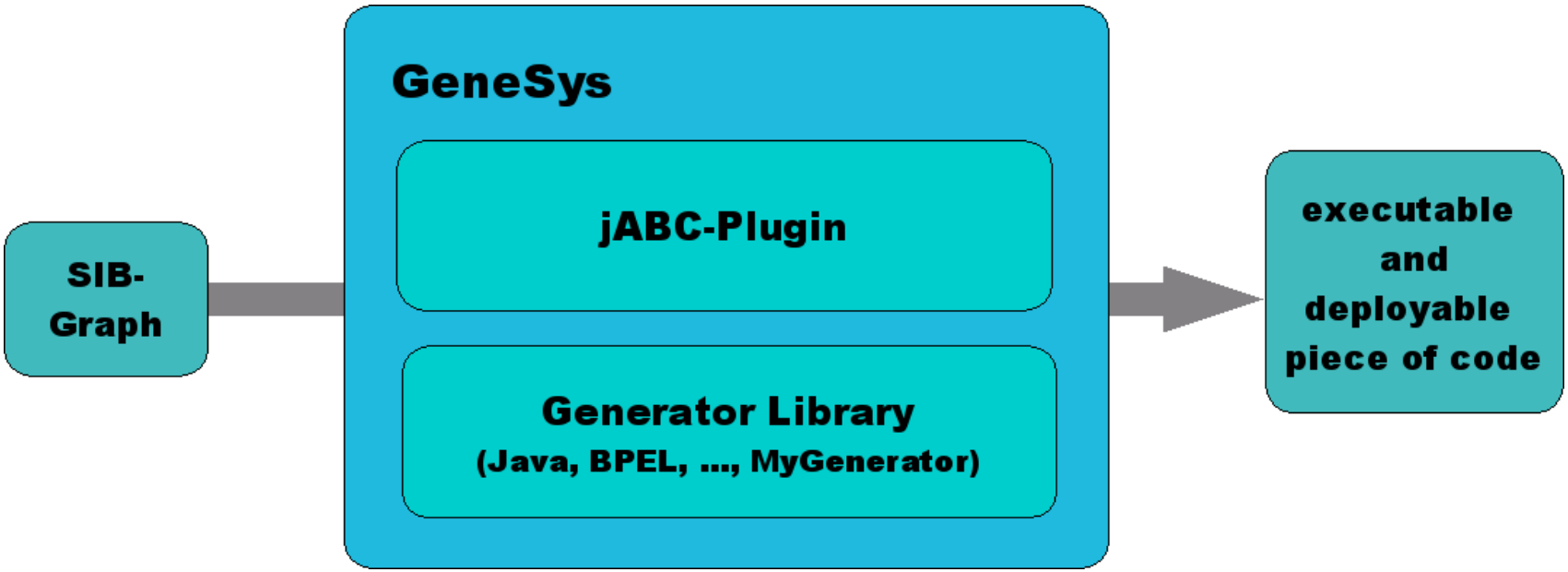
(On all paths it is the case that *remote* does not hold until *inputcheck* does.)



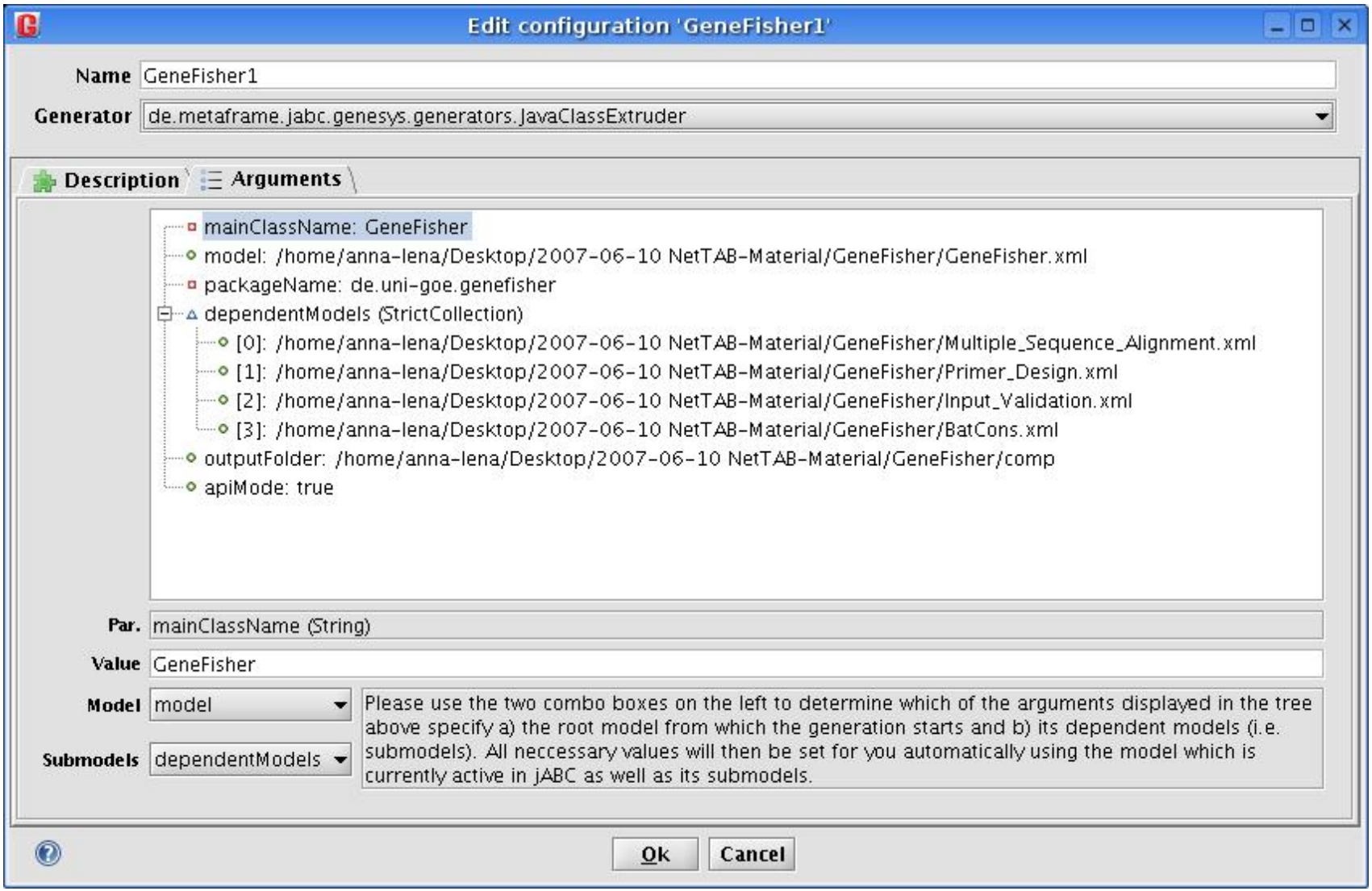
GeneFisher-P: Execution



GeneFisher-P: Compilation (1)

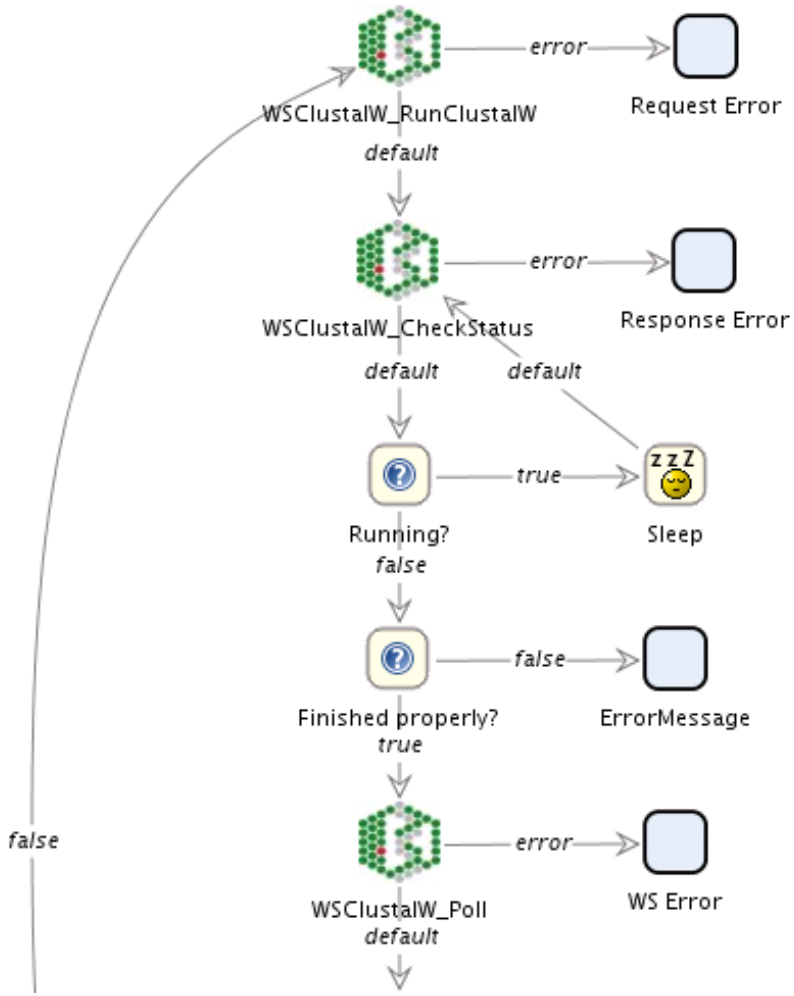


GeneFisher-P: Compilation (2)



Variations of GeneFisher-P

- **Example 1:**
  Using alignment tools from the EBI, e.g. the ClustalW web service.
- Example 2:
  Data retrieval with the EBI's `DBFetch`.
- Different levels of interactivity.
- Selection of alignment tools at runtime.
- ...



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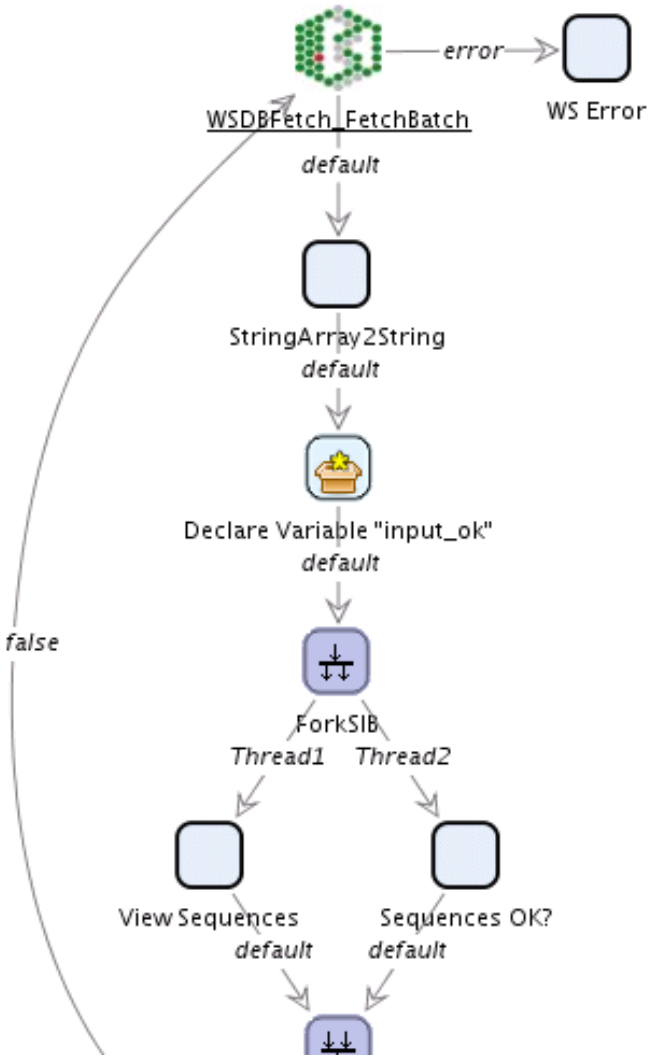
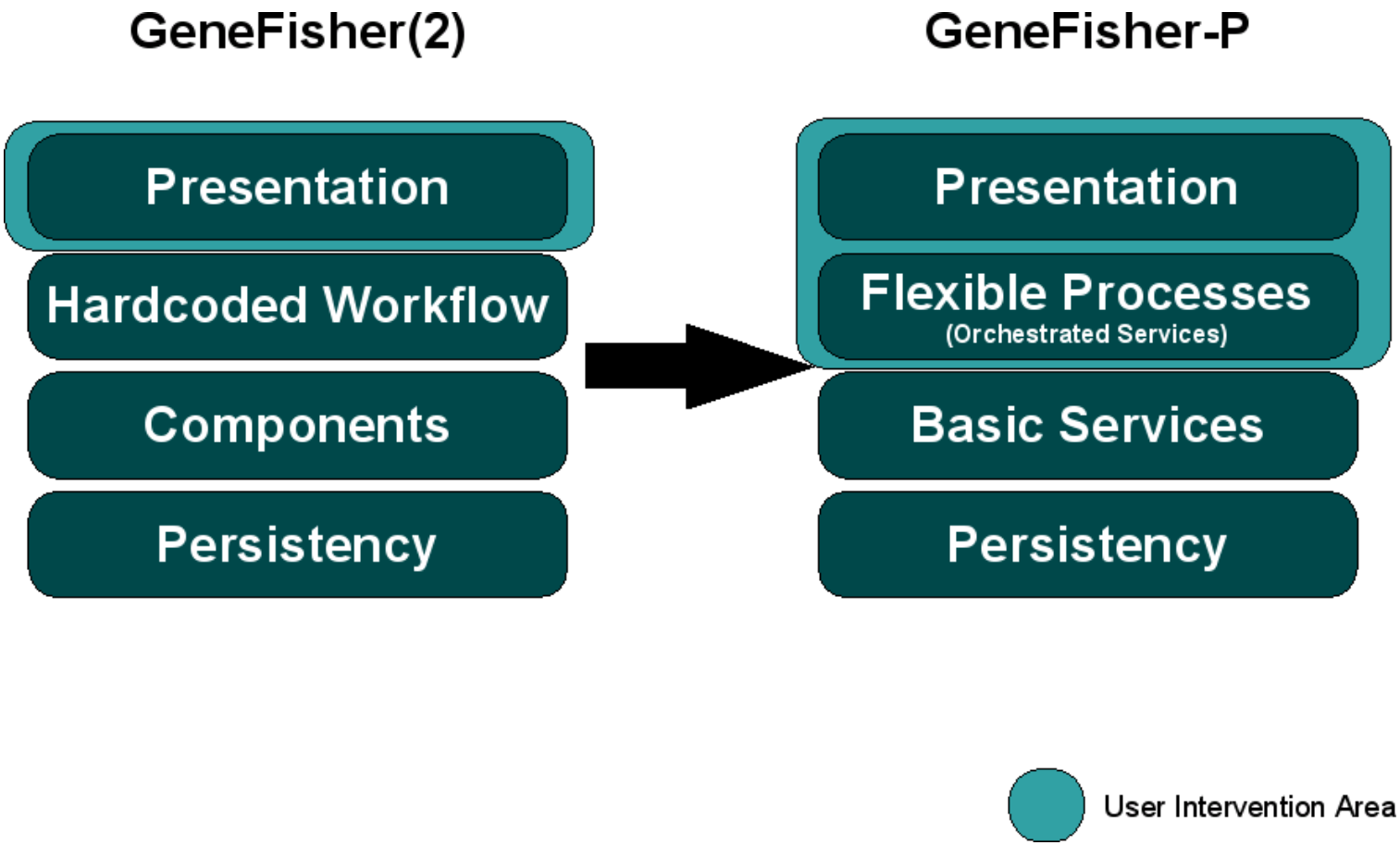


Summary


GeneFisher(2)
Presentation
Hardcoded Workflow
Components
Persistency
GeneFisher-P
Presentation
Flexible Processes
(Orchestrated Services)
Basic Services
Persistency
User Intervention Area

The End

Thanks for your attention!

Questions?