

McROSE : Functional Size Measurement for Rational Rose RealTime

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Agenda

- What is Cosmic-FFP?
- What is Rational Rose RealTime (RRRT)?
- What is McRose?
- McRose Functionalities
- McRose Main Modules
- McRose User Interface
- McRose Limitations
- Conclusion

What is Cosmic-FFP?

- It is a method for measuring the functional size of software. It is used to:
 - estimate software cost
 - compute productivity
 - compute defect ratios
 - manage outsourcing contracts
 - benchmark

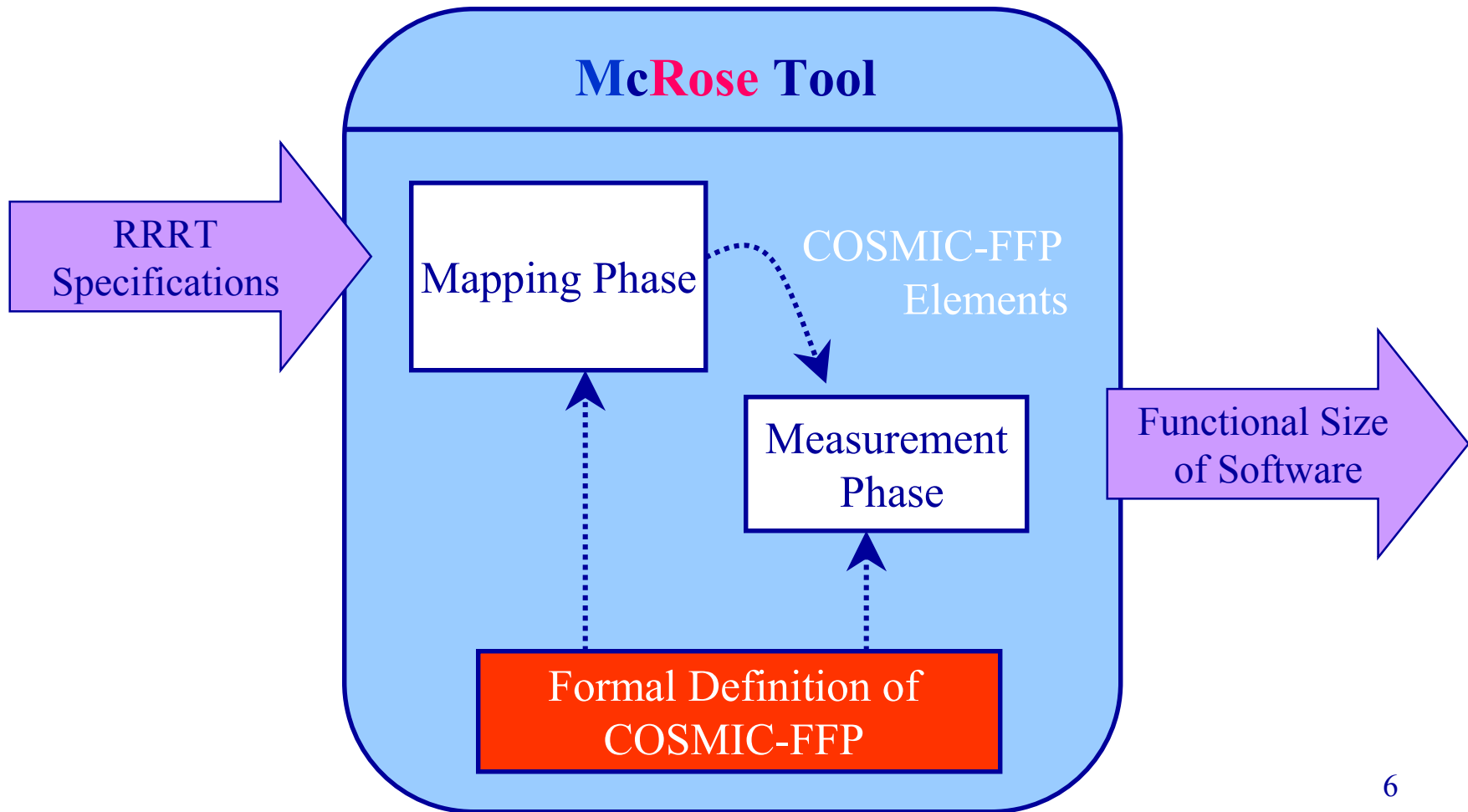
What is Rational Rose RealTime?

- It is a case tool based on a formal modeling language for the development of real-time software
- The notation is a combination of a textual and graphical specification
- Executable instructions of an OO language (C++) may be integrated in the behavior model

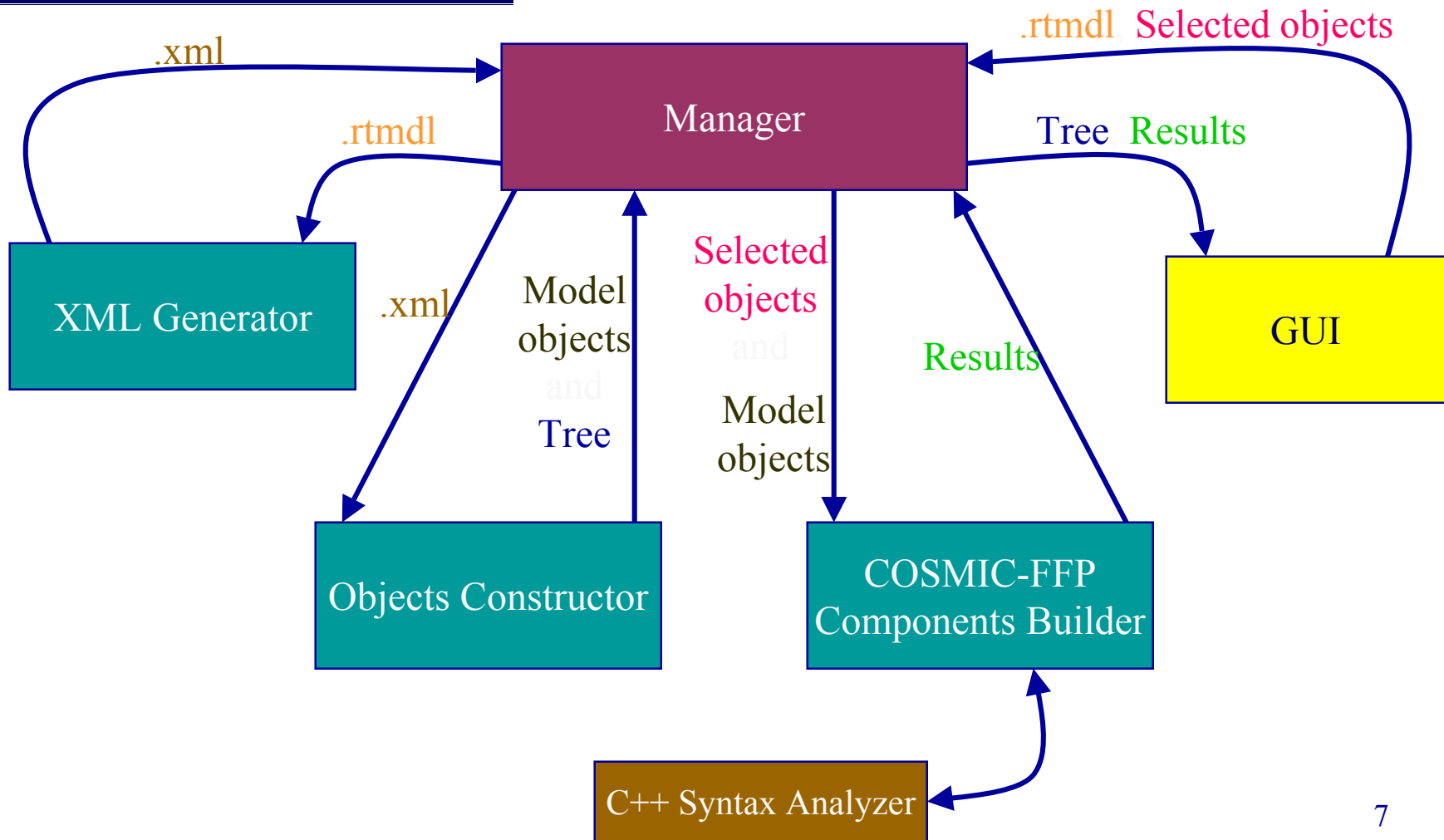
What is McROSE...?

- McRose : Measurement of Cosmic-Full Function Points (FFP) for Rational Rose RealTime (RRRT) specifications
- McRose is a tool to support the measurement of functional software size, based on Cosmic-FFP measurement rules, from specifications written in RRRT notations

What is McROSE ?



McROSE's Design

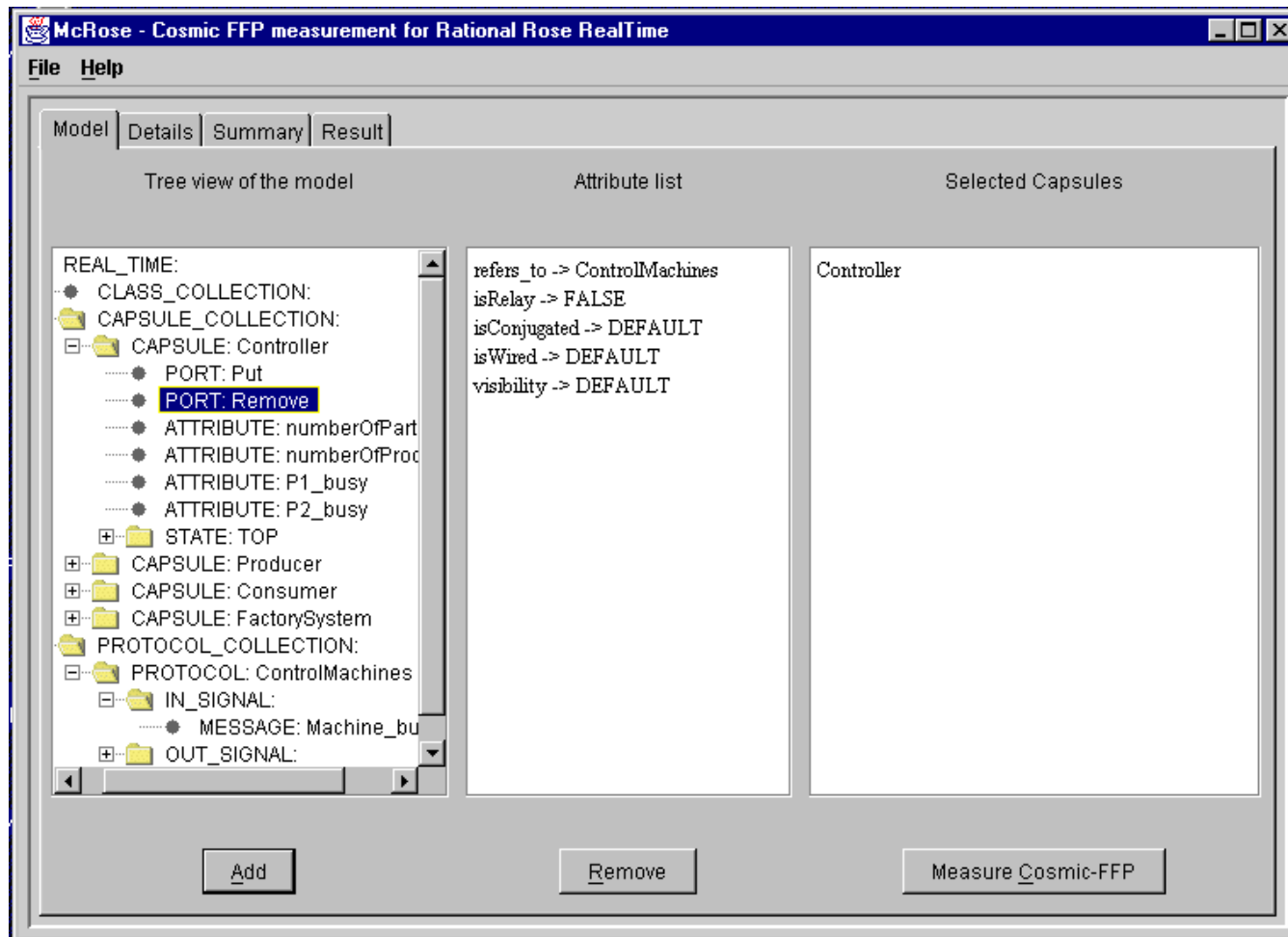


McROSE Functionalities

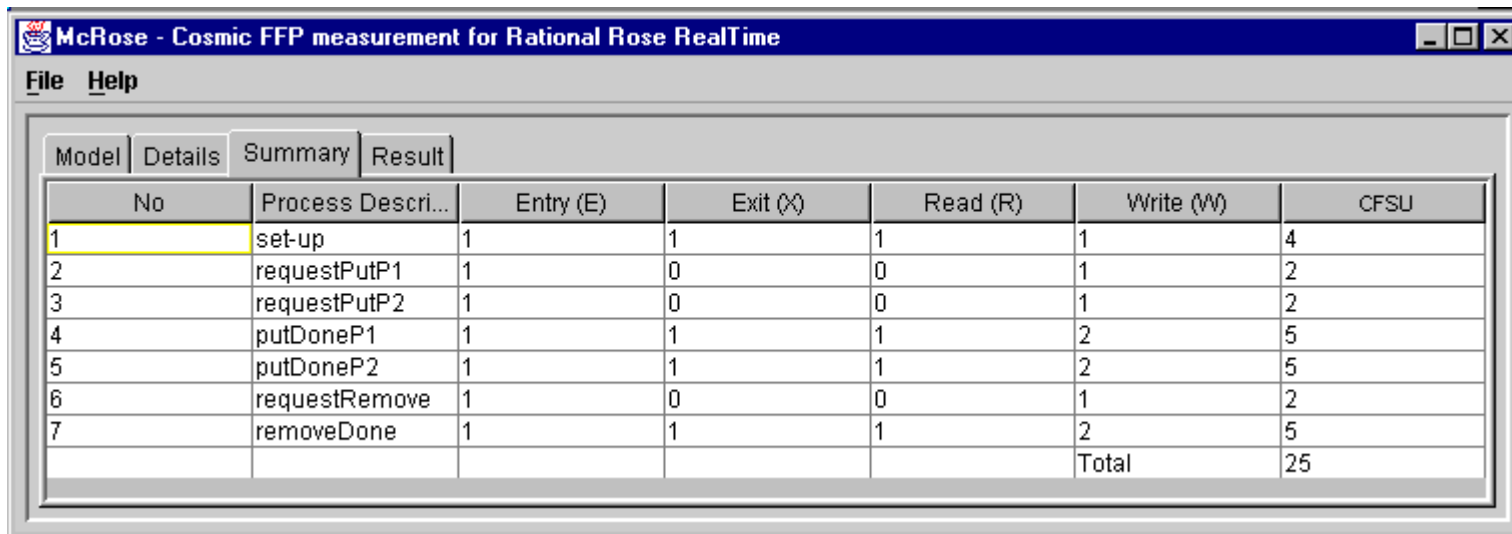
The main functionalities of the McROSE tool are:

- Generation of a RRRT model in XML format
- Visual support of Cosmic-FFP measurement process
- Extraction of RRRT objects required for the measurement process
- Calculation of the number of Cosmic-FFP
- Aggregation and reporting of measurement results

McROSE User Interface...



McROSE User Interface



The screenshot shows a window titled "McRose - Cosmic FFP measurement for Rational Rose RealTime". The window has a menu bar with "File" and "Help". Below the menu bar are four tabs: "Model", "Details", "Summary", and "Result". The "Summary" tab is selected, displaying a table with the following data:

No	Process Descri...	Entry (E)	Exit (X)	Read (R)	Write (W)	CFSU
1	set-up	1	1	1	1	4
2	requestPutP1	1	0	0	1	2
3	requestPutP2	1	0	0	1	2
4	putDoneP1	1	1	1	2	5
5	putDoneP2	1	1	1	2	5
6	requestRemove	1	0	0	1	2
7	removeDone	1	1	1	2	5
					Total	25

Conclusion

- McROSE automatically computes functional software size
- It is based on a formal mapping between COSMIC-FFP and RRRT (formal specification available)
- It provides facilities which can guide users to separately measure software components
- It requires a complete RRRT model
- It is implemented in Java
- It is available for β -testing

Future Work

- The COSMIC-FFP-to- McROSE mapping has been validated with COSMIC-FFP experts; we still need to carry out additional validations; case studies are welcomed !!!
- The current syntax analyzer model is limited to the basic C++ operators. We will incrementally build a C++ syntax analyser to increase McROSE'S power for source code analysis
- Estimate COSMIC-FFP for incomplete RRRT models