Design Document For HEP Senior Design

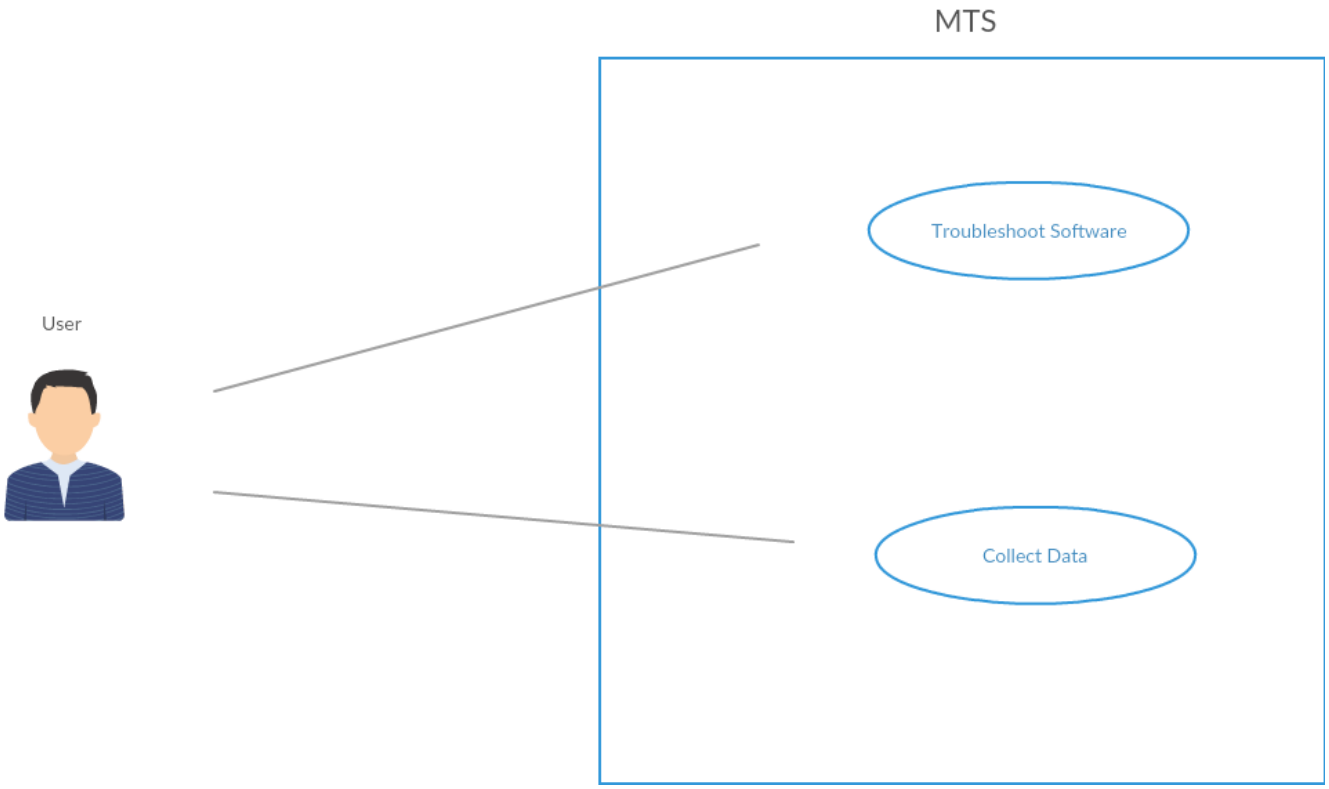
Josef Bostik
Eric Pereira
Ryan Wojtlya

October 1st, 2018

Contents

MTS

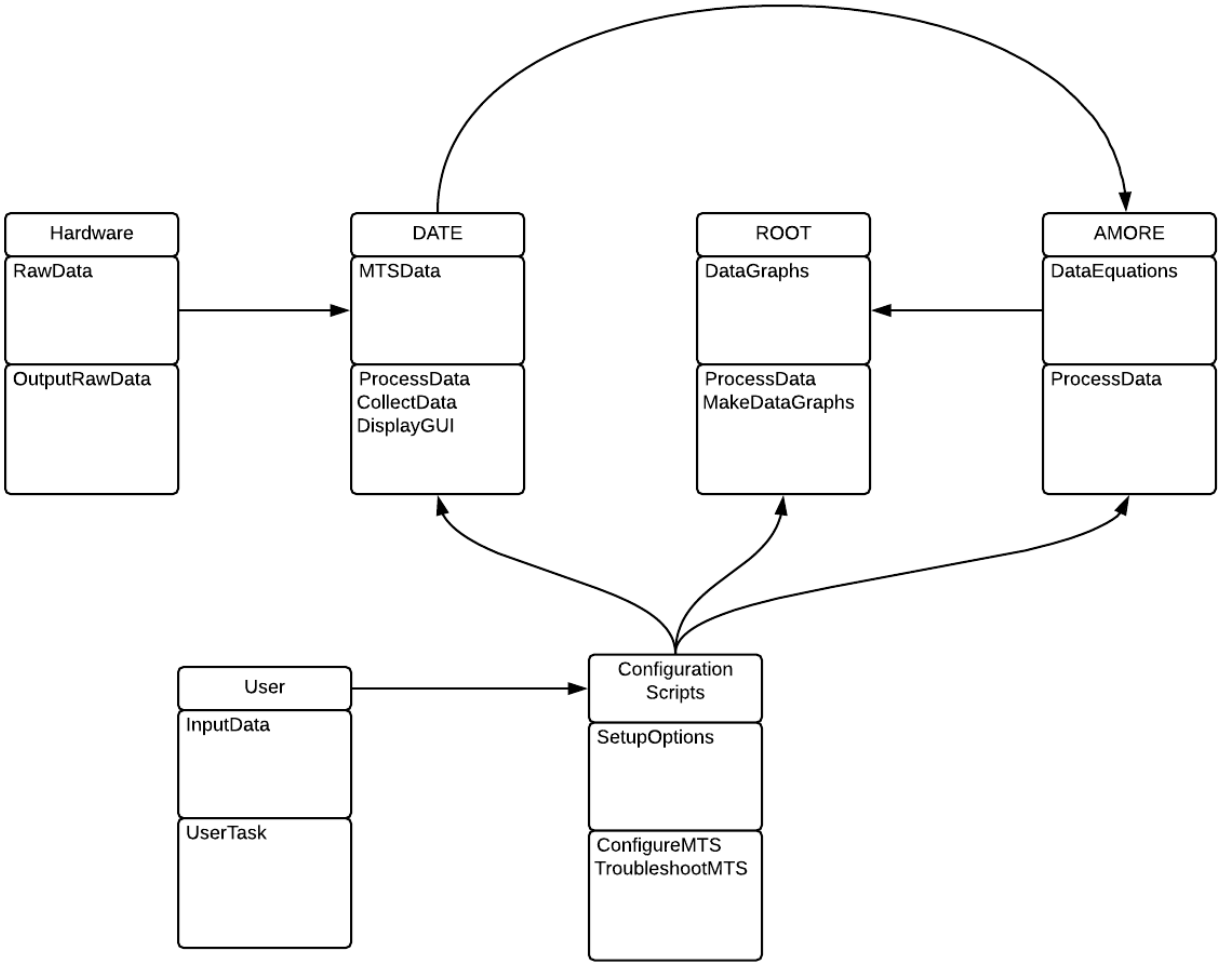
MTS Use Case Diagram:



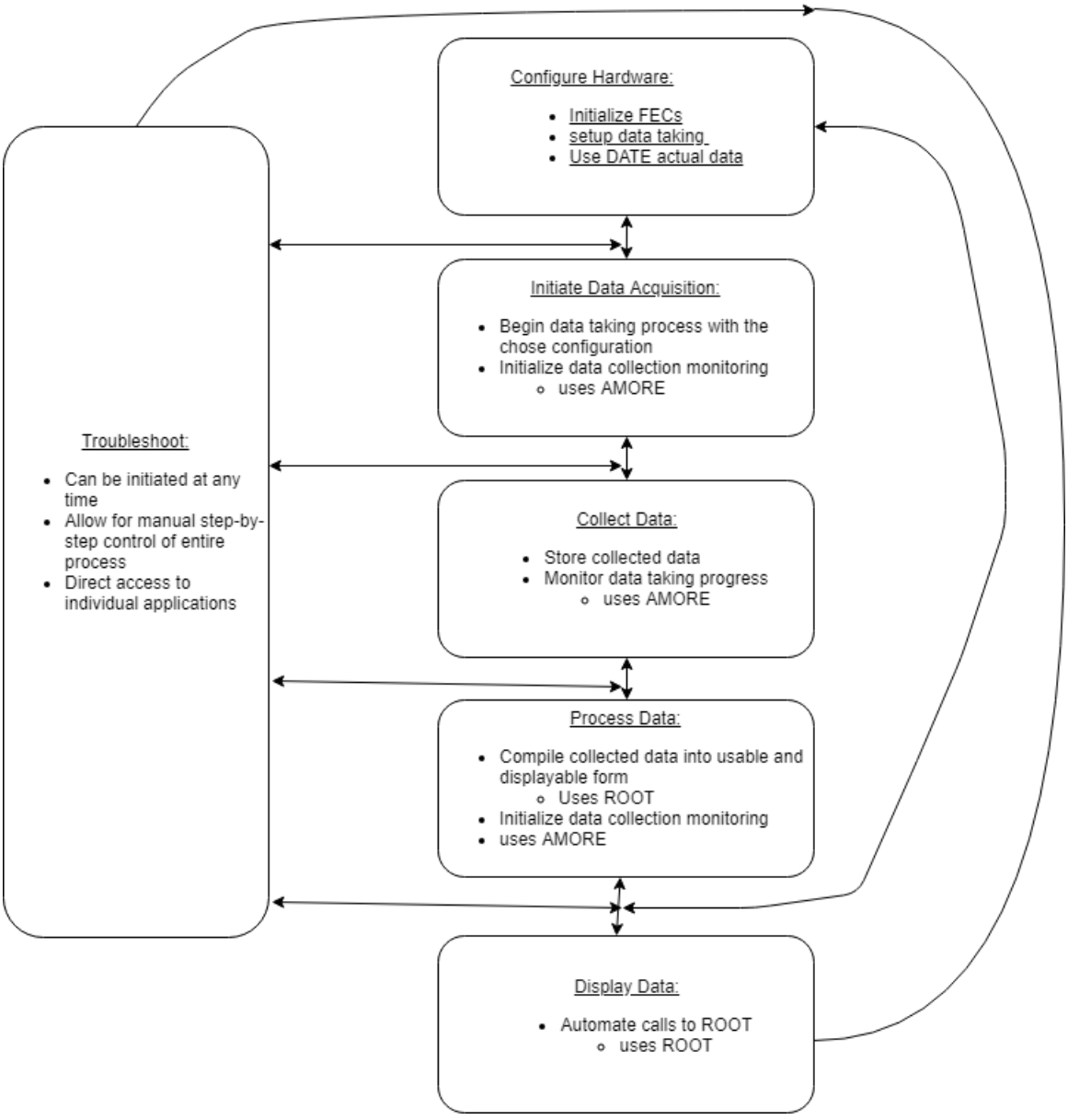
Requirement ID: Troubleshoot software	**Requirement Type**: Functional	**Scenario ID(s)**: TS
Requirement: The software designed shall have the capability of troubleshooting issues with the MTS.		
Rationale: When the MTS isn't functioning correctly, the software must be able to provide a reason to the user.		
Source: Client		
Acceptance Criterion: When the MTS isn't functioning, the script provides a reason in all test cases.		
Dependencies: MTS is not functioning		**Conflicts**: N/A
Supporting Materials: Requirements Document, Client		
Modification History: Last Modified 9/30/18		

Requirement ID: Configure Software	**Requirement Type**: Functional	**Scenario ID(s)**: CS
Requirement: The software designed shall configure the MTS based on the user's required functionality.		
Rationale:The user must be able to easily start the MTS and collect data. Without a configuration script, the user would have to manually move data from one application to another.		
Source: Client		
Acceptance Criterion: Data is moved autonomously between software applications DATE, ROOT, and AMORE.		
Dependencies: N/A		**Conflicts**: N/A
Supporting Materials: Requirements Document, Client		
Modification History: Last Modified 9/30/18		

MTS Class Diagram:

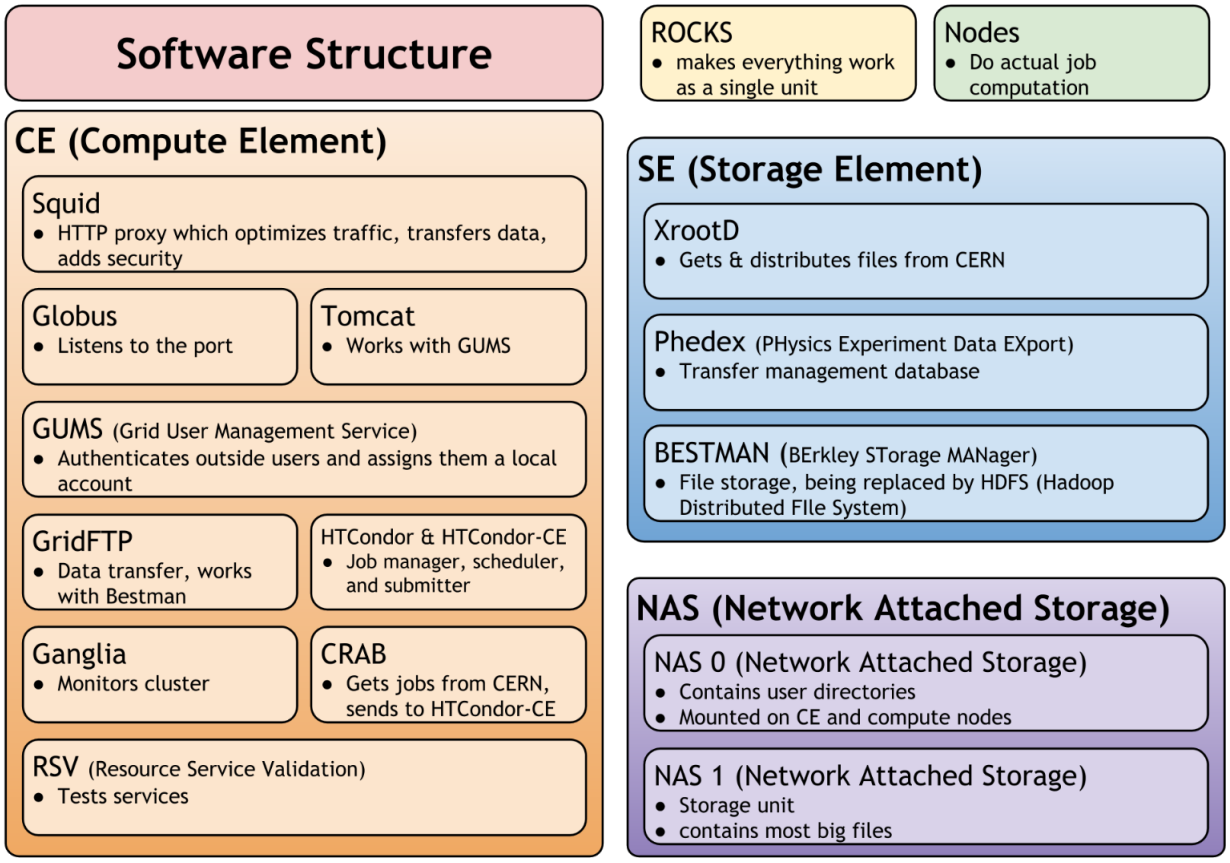


UML


Configure Hardware:
Initialize FECs
setup data taking
Use DATE actual data
Initiate Data Acquisition:
Begin data taking process with the chose configuration
Initialize data collection monitoring
uses AMORE
Troubleshoot:
Can be initiated at any time
Allow for manual step-by-step control of entire process
Direct access to individual applications
Collect Data:
Store collected data
Monitor data taking progress
uses AMORE
Process Data:
Compile collected data into usable and displayable form
Uses ROOT
Initialize data collection monitoring
uses AMORE
Display Data:
Automate calls to ROOT
uses ROOT

Cluster

Software Overview:



Cluster Use Case Diagram: