



F', Open Source, and the Future

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Agenda

- F' and Open Source
- Benefits of Open Source
- Lessons Learned
- F' and the Future

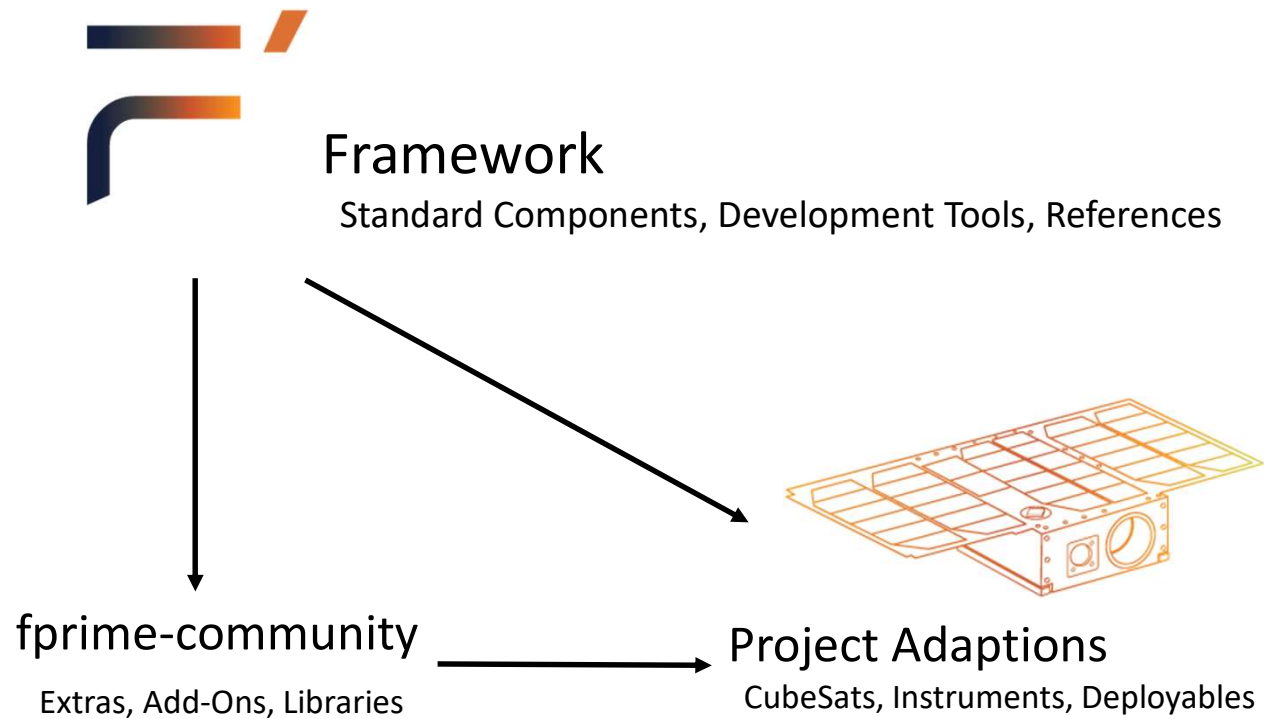
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F' and Open Source



Framework and Projects



Open Sourcing



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<https://octodex.github.com/original/>

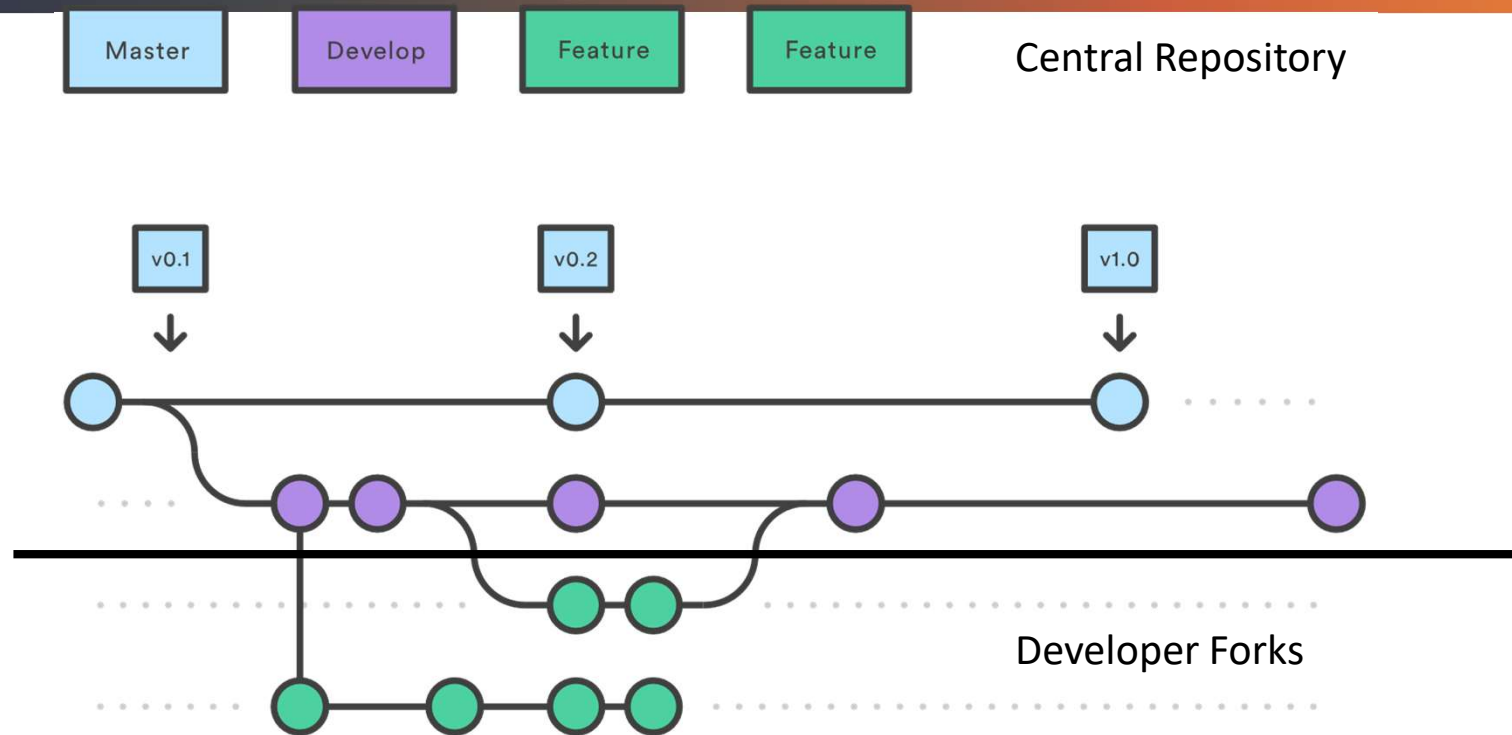


2013 Internal Development 2017 Open Development 2024

Apache License, Version 2.0



F ' Open Development Model



<https://www.atlassian.com/git/tutorials/comparing-workflows/gitflow-workflow>



Open Tooling and Documentation



Static Analysis



<https://www.doxygen.nl/index.html>



<https://www.sphinx-doc.org/en/master/>

Generated Documentation


| | | |
|---|--|---|
| ✓ | All checks have passed 2 successful and 2 neutral checks | Hide all checks |
| ✓ | CI / build (pull_request) Successful in 20m | Required Details |
| ■ | LGTM analysis: JavaScript Completed in 42s — No code changes detected | Details |
| ■ | LGTM analysis: Python Completed in 42s — No code changes detected | Details |
| ✓ | LGTM analysis: C/C++ Successful in 7m — 1 new alert | Details |

Automatic Pull Request Verification



Benefits of Open Source

Extended Oversight

 Flight Software & Embedded Systems Framework

[View on GitHub](#)

These tutorials will walk the user from a basic getting-started guide through designing a full system for use with F. This will help new users to learn F and walk through the most basic steps in developing an F application.


Tutorials Index

- [GettingStarted](#)
- [MathComponent](#)
- [GpsTutorial](#)

Documentation Edits

GDS GUI blank after custom type used in port #322

[Open](#) Galatis-Giuliano opened this issue 24 days ago · 5 comments



Galatis-Giuliano commented 24 days ago

Problem Description

I am working on a project which requires an array to be used as the input to a component. We are currently making modification to the MathComponent created in the Math Tutorial to accommodate our project. We attempted to follow the specifications shown at this link to create our .xml files. We are running into issues when trying to run the GDS GUI. We just receive a blank page. We figured out that this issue is caused when changing the port type in the math sender to our custom array. The .xml files are shown below.

```
<component name="MathSender" kind="active" namespace="Ref">
  <import_array_typeRef/MathTypes/TestArray1.xml/> <import_array_type>
  <import_port_typeRef/MathPorts/MathQPortAI.xml/> <import_port_type>
  <import_port_typeRef/MathPorts/MathQPortAI.xml/> <import_port_type>
  <comment>Component sending a math operation</comment>
  <ports>
    <port name="mathOut" data_type="Ref:MathQ" kind="output">
      <comment>
        Ref for sending the math operation
      </comment>
    </port>
  </ports>
</component>
```

Assignees

No one—assign yourself

Labels

bug

Projects

None yet

Milestone

No milestone

Linked pull requests

Successfully merging a pull request may close this issue.

More info

Error Reports


cruise2coast reviewed on Dec 1, 2020

[View changes](#)

Svc/BufferManager/BufferManagerComponentImpl.cpp


Hide resolved

209 + }
210 + {
211 + // write telemetry values
212 + this->Write_HIBuffs(this->m_highWater);



cruise2coast on Dec 1, 2020

It may be a good idea to toggle these telemetry reports on/off via commands. By default, these telemetry channels could be turned off and not reported to avoid constantly generating telemetry packets. When needed, these channels can be turned on for reporting via a command. This would help control telemetry packet generation/output especially in radio RF bandwidth constrained environments.



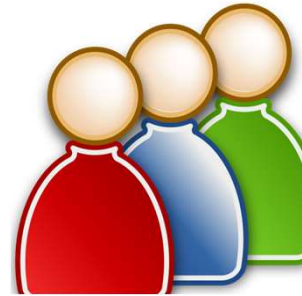
bocchino on Dec 1, 2020

A related issue is that the previous version had a mechanism for suppressing out-of-memory warnings, so repeated requests wouldn't cause spam. I don't think that mechanism has been incorporated here. Maybe add event throttling to that event?

Design and Code Reviews



Community of Expertise



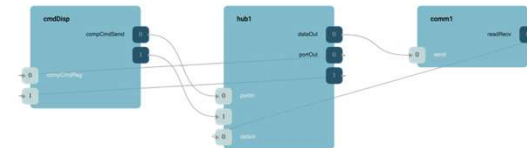
<https://commons.wikimedia.org/wiki/File:User-group-square.svg>



Best Practices



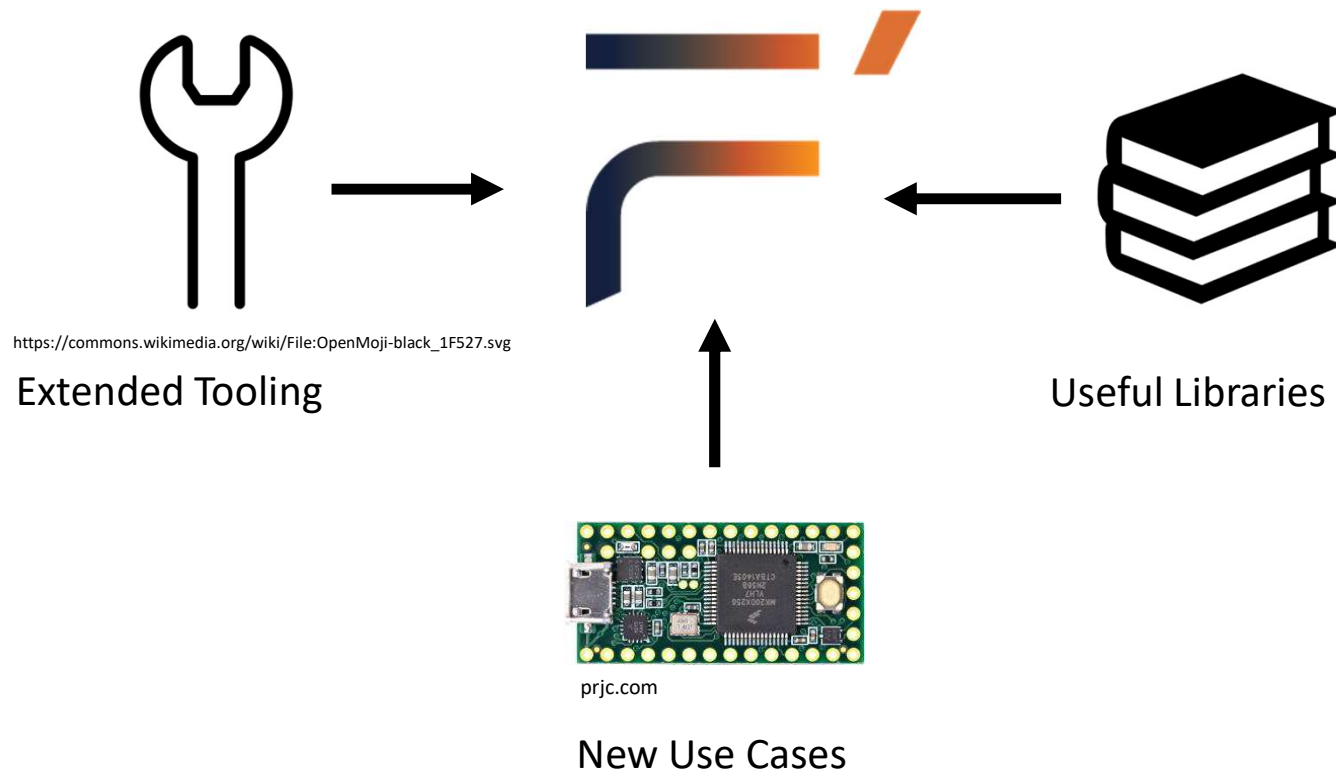
Answers



Recommended Patterns



Ecosystem Surrounding Framework

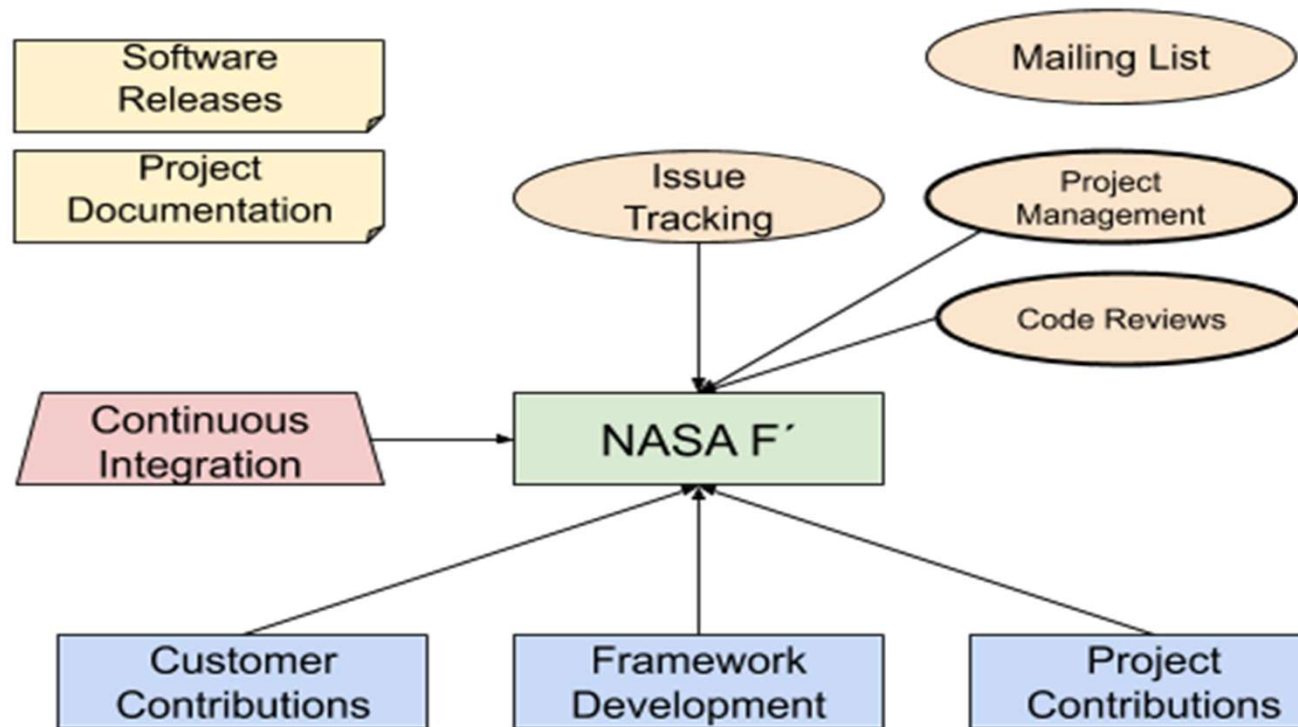




Lessons Learned

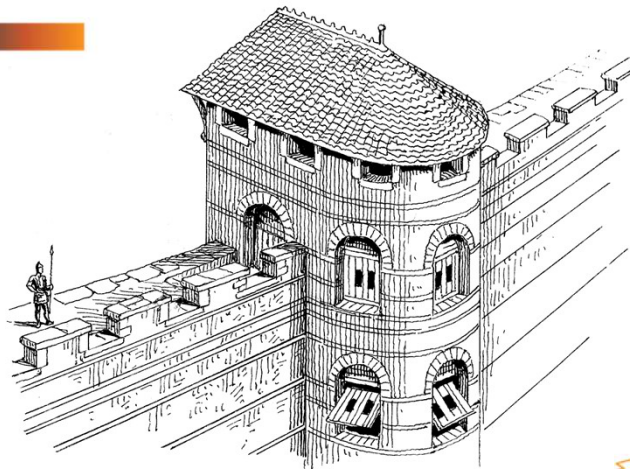


Embrace Openness

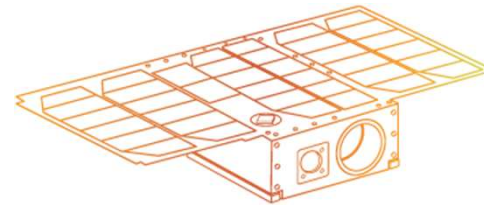




Separate Product Line from Projects



Pearson Scott Foresman, Public Domain



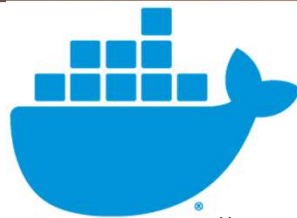
Budget, Schedules, Short-Cuts



Leverage Tools and Automation



Free and Open



<https://docker.com>

Ease Maintenance



Standard Practice



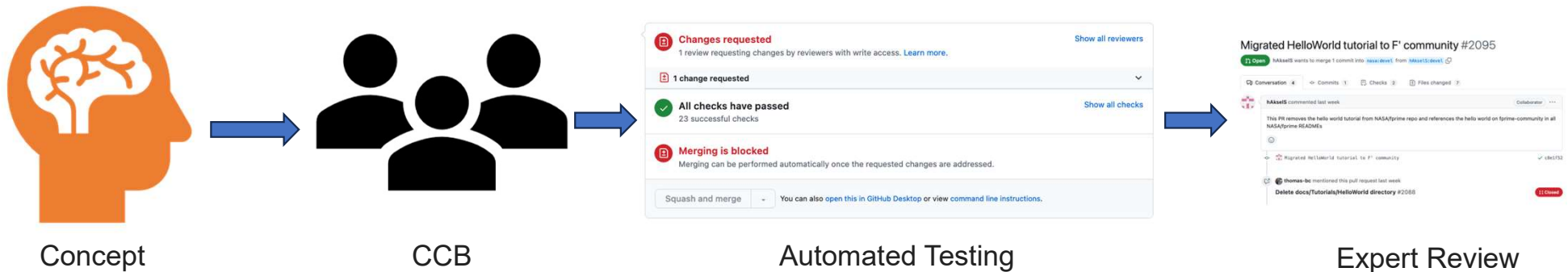
Low Integration Overhead



<https://github.com/cookiecutter/cookiecutter>

Reduce Development

Accepting Contributions



All contributions to the F' product line are approved via a change control board (CCB), run through a comprehensive set of automated tests, and finally reviewed by a subject matter expert before merging into the product line.

Questions?



NASA/JPL-Caltech



Further Information on F Prime

F Prime Website:

<https://fprime.jpl.nasa.gov>

F Prime Software:

<https://github.com/nasa/fprime>

F Prime Community:

<https://github.com/nasa/fprime/discussions>



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