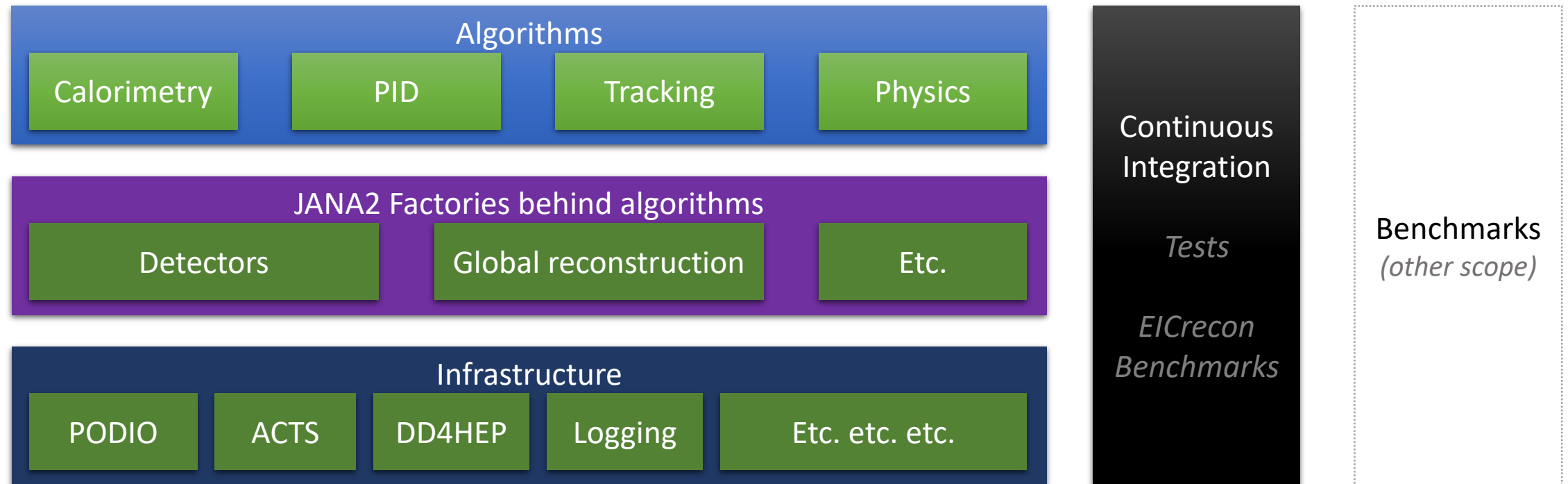


# ElCrecon

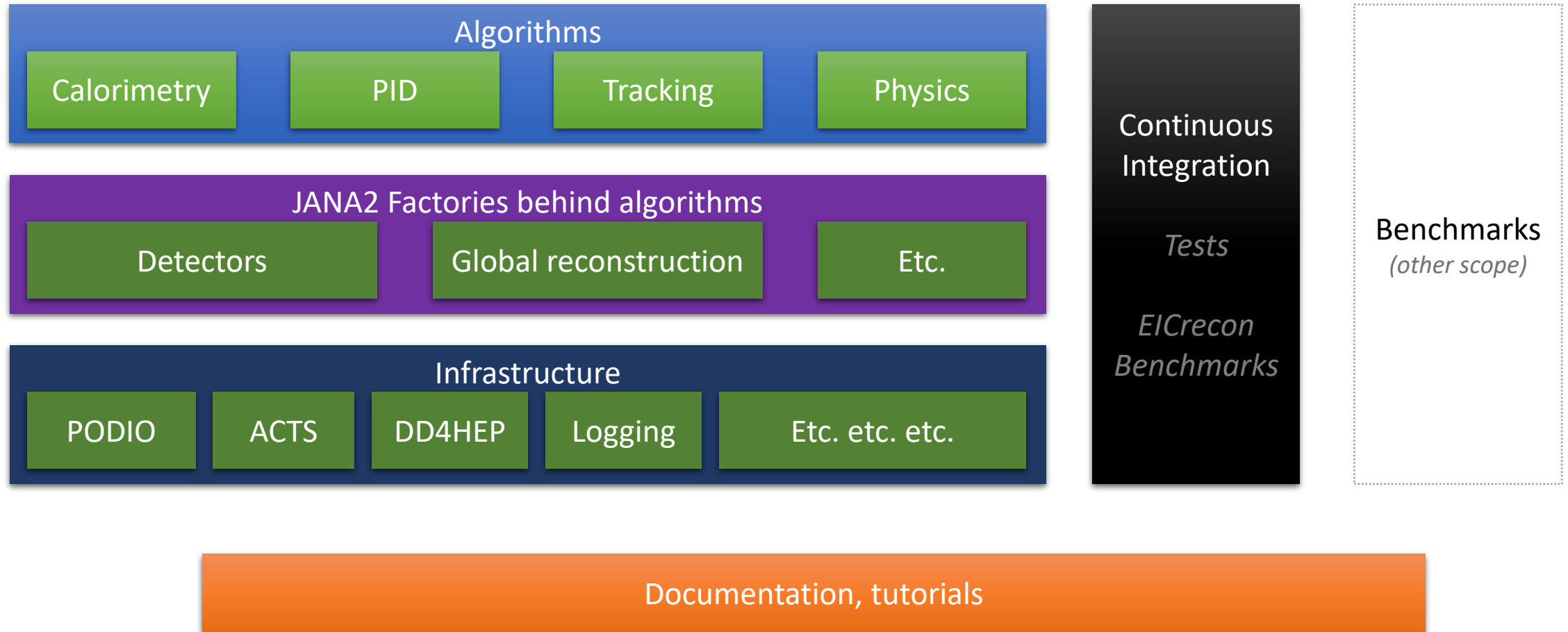
## March simulation campaign

Dmitry Romanov  
2023-03-23

# EIC recon parts. CI Testing



# Responsibilities



# Major new features

- PODIO reimplementation (*end of this week*)
  - Inheritance from JFactoryPodioT (*end of this week*)
  - **Enable associations of reconstruction-MC** (*1 week*)
  - **Enable track – cluster matching** (*1.5 weeks*)
- Tracking chain improvement:
  - Allow events+background to be propagated through tracking chain (*days*)
  - Realistic seeding (*1 month from today morning update*)
  - Extended trajectory info (*days*)

# Major new features

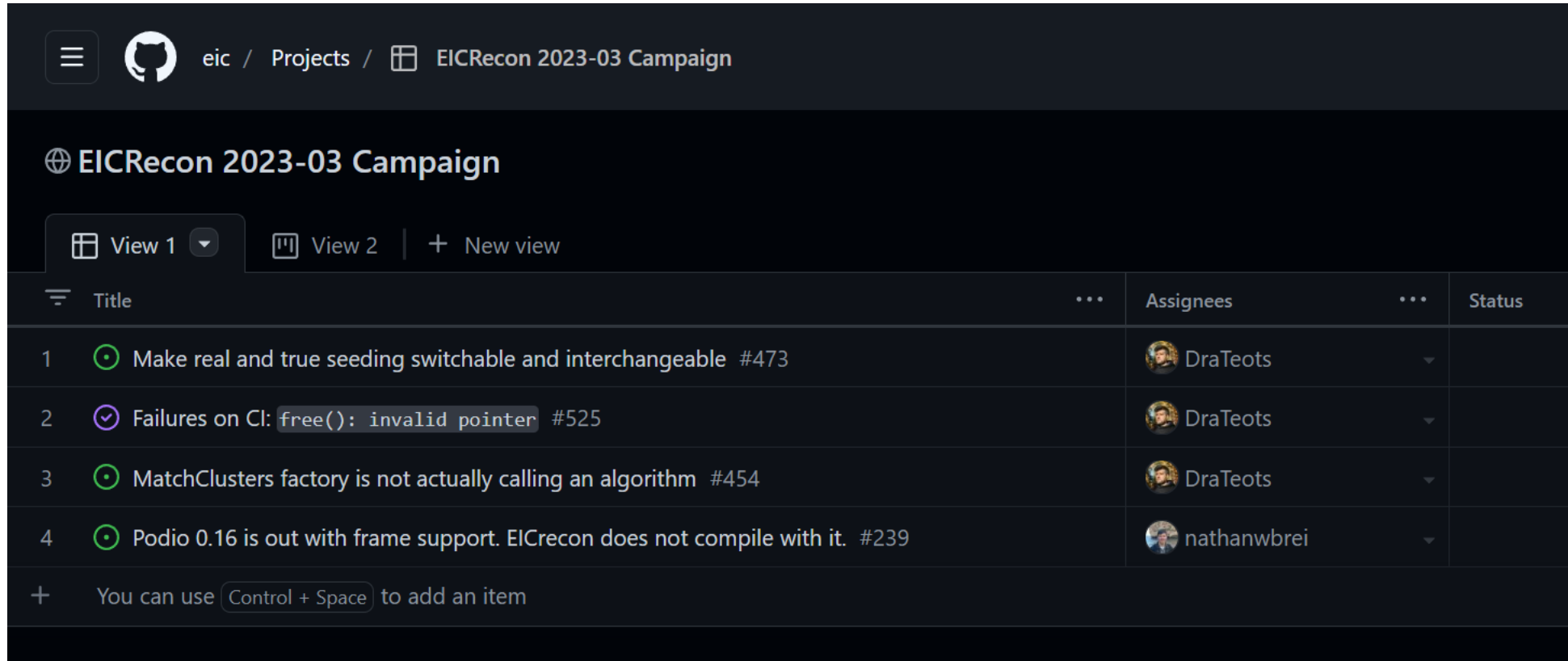
- Calorimetry (*TBD*)
- DRICH (*2 weeks. From TF meeting yesterday*)
- Initial Jet reconstruction (*2 weeks. From TF meeting yesterday*)
- Far forward – backward (*TBD*)

# PODIO

- Testing branch on JANA2 – there
- Testing branch on EICrecon – there
- CMake refactoring – in progress with JANA2 new release

# GitHub project

- [The link](#)



The screenshot shows a GitHub Project page for the 'EICRecon 2023-03 Campaign'. The interface is in dark mode. At the top, there's a navigation bar with the GitHub logo, the username 'eic', and the project name 'Projects / EICRecon 2023-03 Campaign'. Below this, the project title 'EICRecon 2023-03 Campaign' is displayed with a globe icon. There are two view tabs: 'View 1' (selected) and 'View 2', along with a '+ New view' button. The main content area shows a list of project items. Each item has a number, a status icon (green circle with a dot or a purple checkmark), a title, a number in a box, and an assignee. The first four items are: 1. 'Make real and true seeding switchable and interchangeable #473' assigned to DraTeots; 2. 'Failures on CI: free(): invalid pointer #525' assigned to DraTeots; 3. 'MatchClusters factory is not actually calling an algorithm #454' assigned to DraTeots; 4. 'Podio 0.16 is out with frame support. EICrecon does not compile with it. #239' assigned to nathanwbrei. At the bottom, there's a '+ You can use Control + Space to add an item' button.

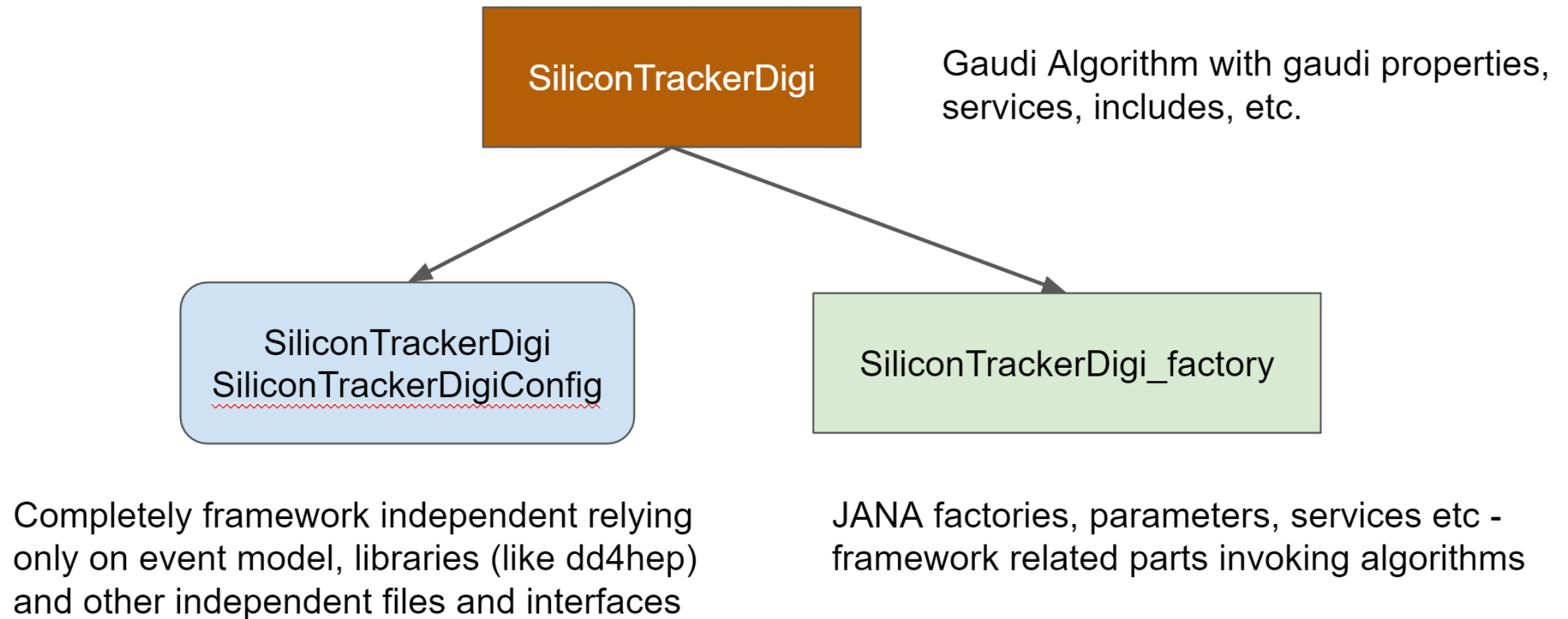
	Title	...	Assignees	...	Status
1	Make real and true seeding switchable and interchangeable #473		DraTeots	▼	
2	Failures on CI: <code>free(): invalid pointer</code> #525		DraTeots	▼	
3	MatchClusters factory is not actually calling an algorithm #454		DraTeots	▼	
4	Podio 0.16 is out with frame support. EICrecon does not compile with it. #239		nathanwbrei	▼	

+ You can use `Control + Space` to add an item

BACKUP



# How we ported juggler algorithm



# EIC recon parts. Algorithms



1. **Algorithms has no links to JANA2 or EICrecon,**  
*they are completely independent.*  
*No services or any other elements are used.*

2. **Live in their own separated folder**

3. **Separate build system**  
*They are built like regular libraries (not plugins)*

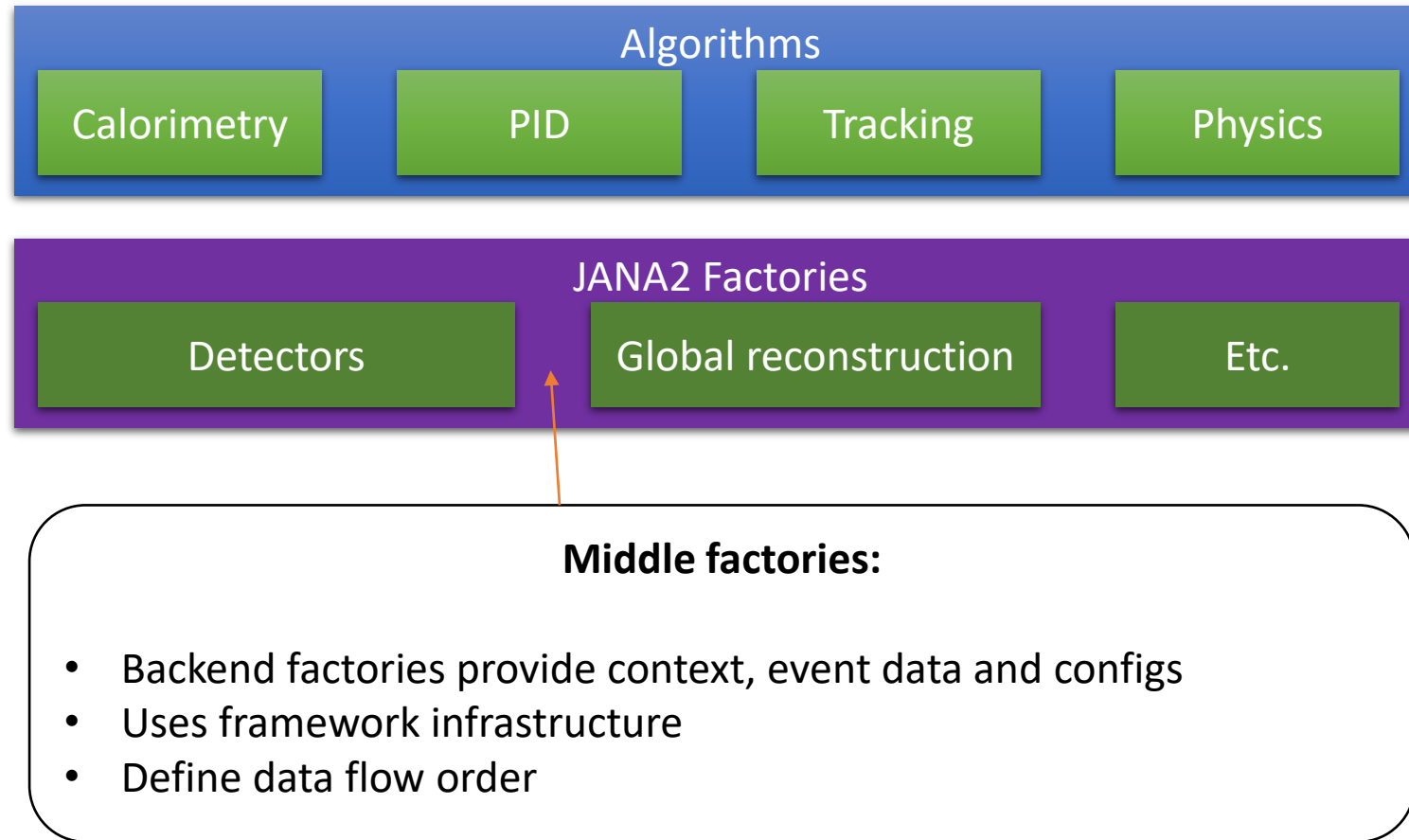
4. **Usable in any other framework out of the box**

5. **Algorithms are isolated from each other,** so if one takes a single algorithm and just drop it to another framework - **it will work with no any code modification.**

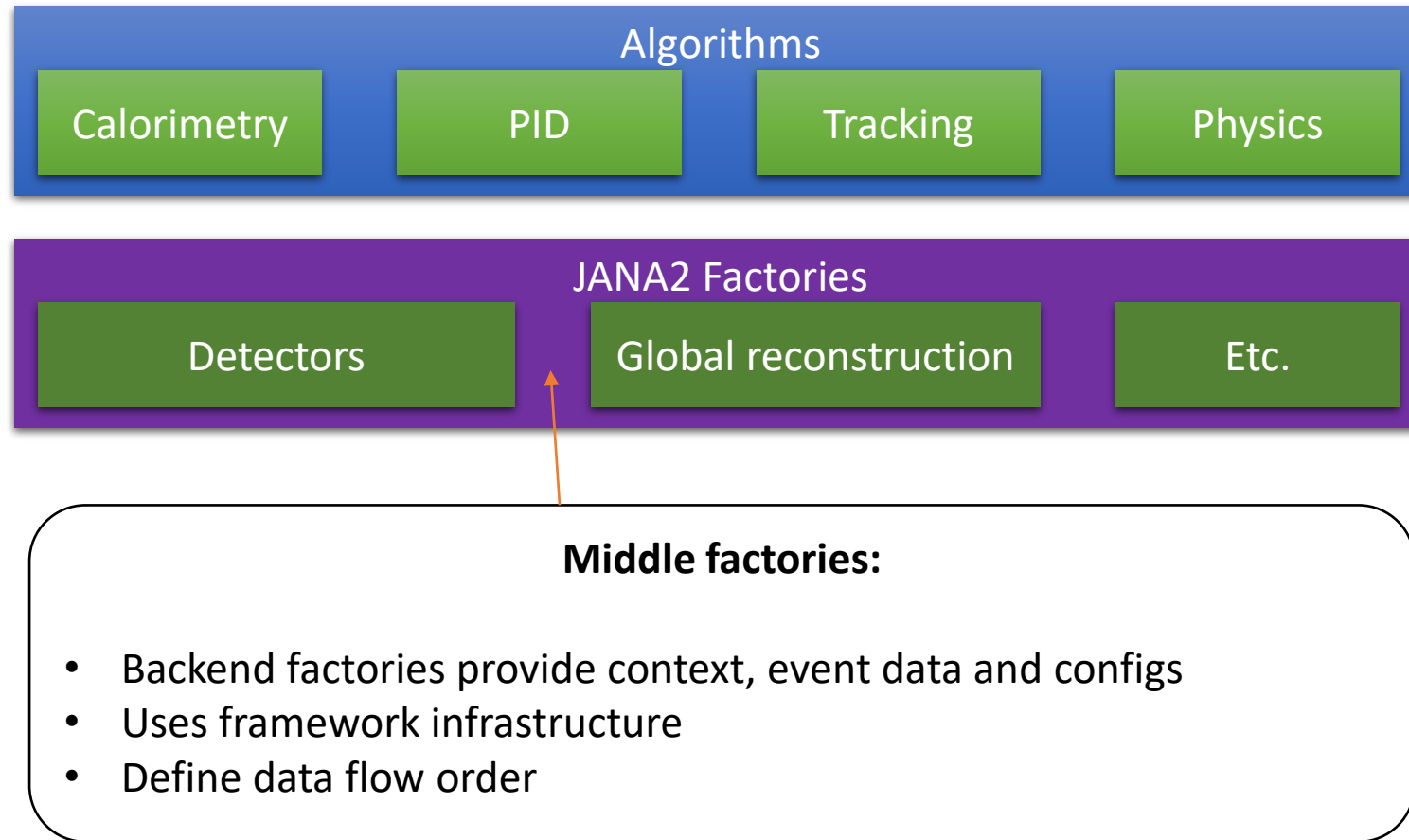
## Each algorithm :

- Require some global context (geometry, logging, ACTS)
- Process events
- Configuration

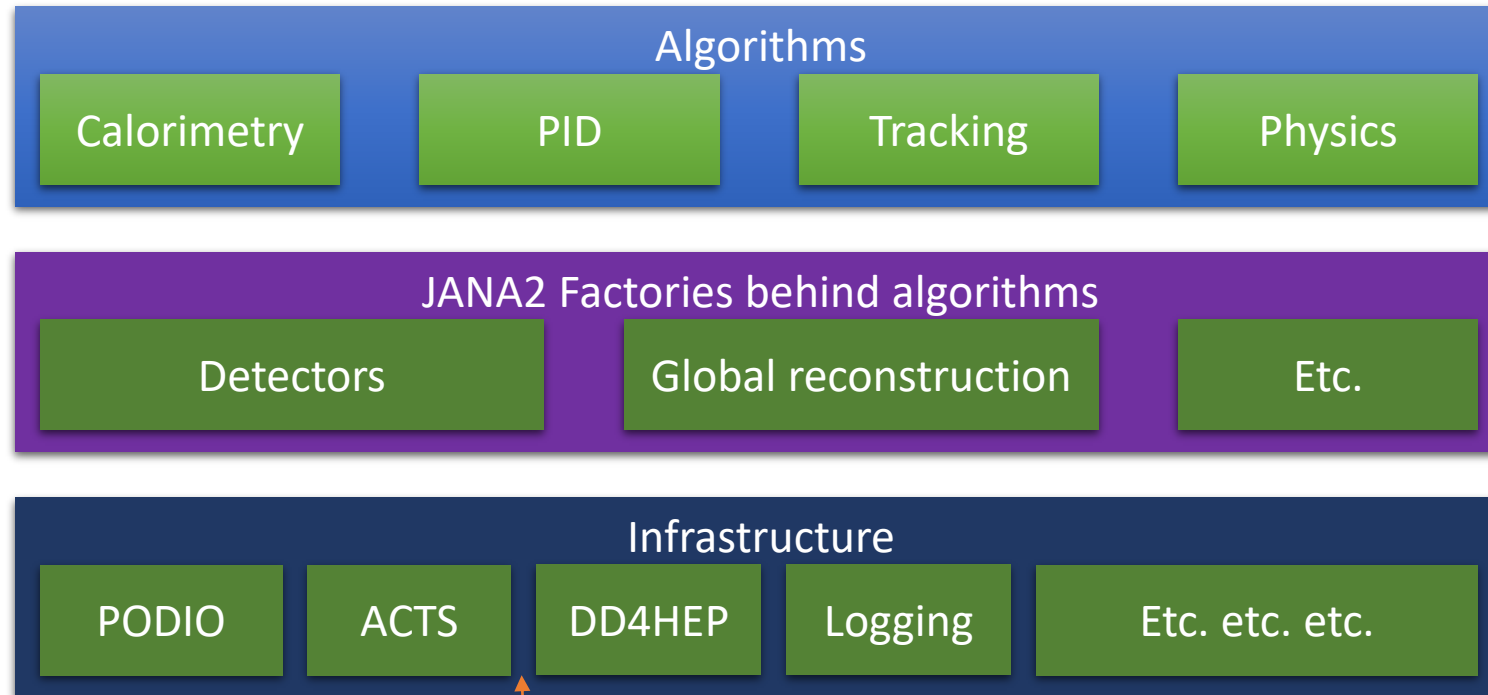
# EIC recon parts. Middle factories



# EIC recon parts. Middle factories



# EIC recon parts. Infrastructure

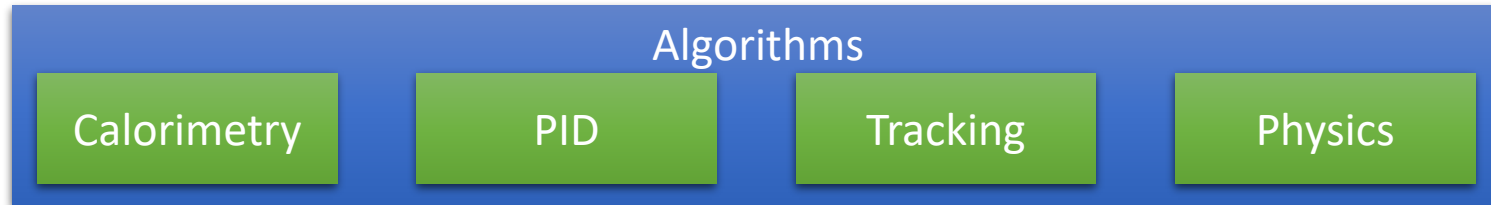


## Infrastructure factories and services:

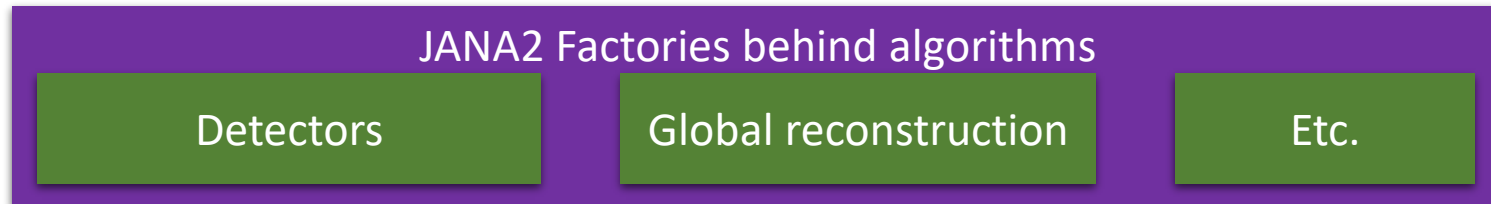
- Provide proper initialization for underlying services
- Uses framework infrastructure
- Define data flow order

# EIC recon parts. Infrastructure

Modified  
to fit new API



Heavy rework



Mostly intact  
fit new API



# GitHub labels:

30 labels

30 labels				Sort ▾
meta:bug	Something isn't working	13	Convert issues	Edit Delete
meta:duplicate	This issue or pull request already exists			Edit Delete
meta:feature	New feature or request	18	Convert issues	Edit Delete
meta:good first issue	Good for newcomers	1	Convert issues	Edit Delete
meta:help wanted	Extra attention is needed	4	Convert issues	Edit Delete
meta:invalid	This doesn't seem right			Edit Delete
meta:question	Further information is requested			Edit Delete
meta:QuickFix!	Fix that requires less time than create an issue and PR =)			Edit Delete
meta:todo	Not a bug, not a feature, but to be done	2	Convert issues	Edit Delete
meta:wontfix	This will not be worked on			Edit Delete

...

# Label categories

[meta]  
(Usual labels)

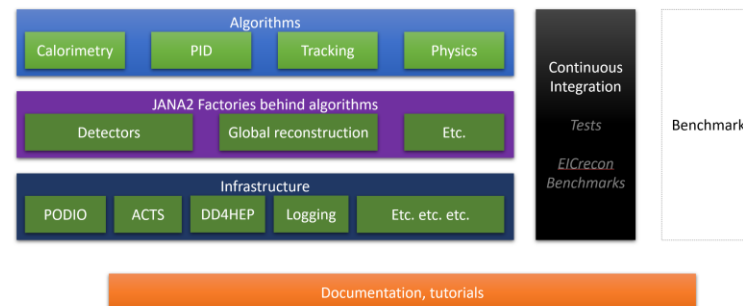
meta:bug	Something isn't working
meta:duplicate	This issue or pull request already exists
meta:feature	New feature or request
meta:good first issue	Good for newcomers
meta:help wanted	Extra attention is needed
meta:invalid	This doesn't seem right
meta:question	Further information is requested
meta:QuickFix!	Fix that requires less time than create an issue and PR =)
meta:todo	Not a bug, not a feature, but to be done
meta:wontfix	This will not be worked on

[part]  
(EIC recon part)

part:algorithms	Relates to algorithm
part:CI	Continuous integration and testing
part:cmake	Build system bugs and features
part:detectors	Relates to a separate detector (or a couple of)
part:documentation	Improvements or additions to documentation
part:factories	Backend factories and related data flow
part:geometry	Relates to geometry
part:integration	Integration with dependencies and peer packages
part:io	Input and output, PODIO and others
part:logging	What goes to log and output
part:services	Core services and functionality
part:tests-benchmarks	Tests, benchmarks, visual and other tools for that

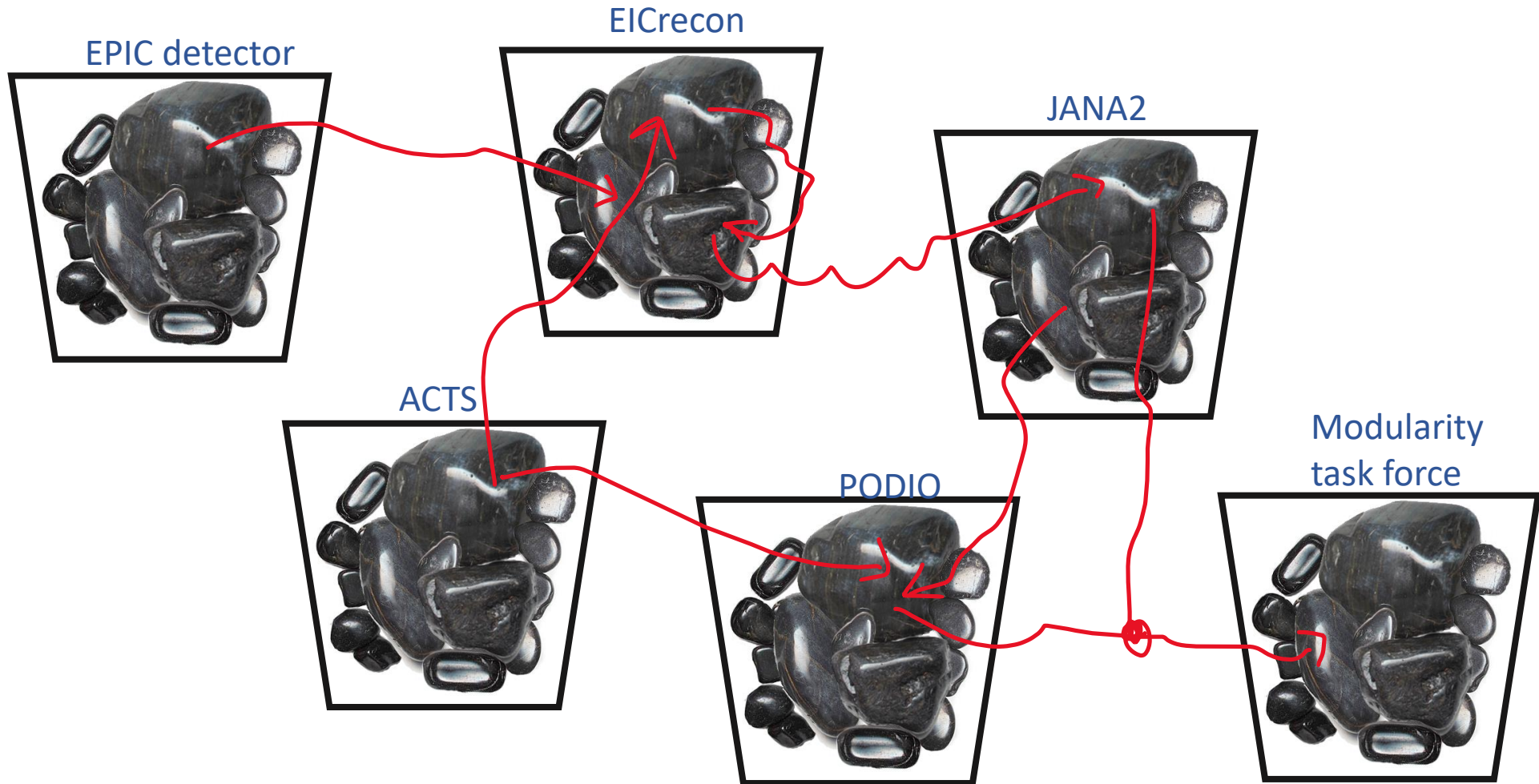
[reco]  
(Reconstruction context)

reco:calorimetry	relates to calorimetry
reco:defaults and flags	User parameters and default values
reco:digitization	Digitization algorithms we use
reco:far-forward	Far forward reconstruction
reco:global-reco	Global reco such as particles association, global PID, etc
reco:physics	
reco:PID	Relates to PID reconstruction
reco:tracking	Relates to tracking reconstruction

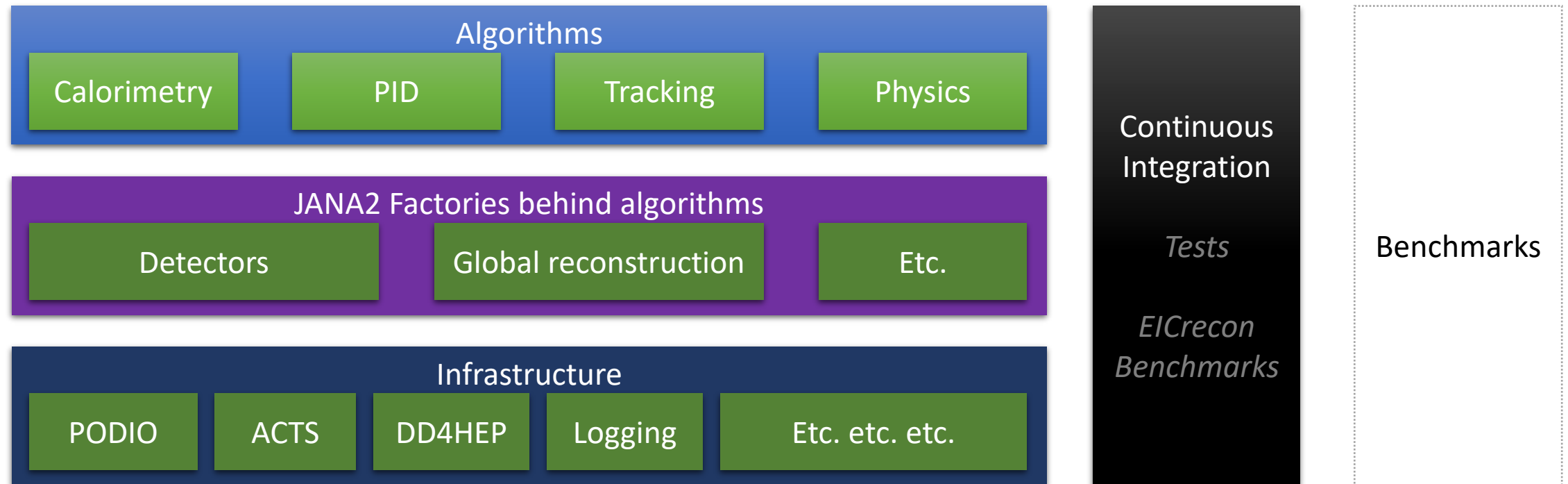




# Big rocks, small rocks

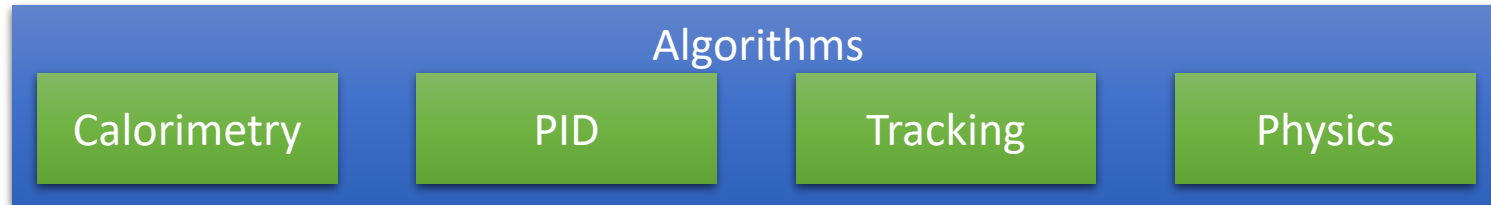


# EIC recon parts. CI Testing

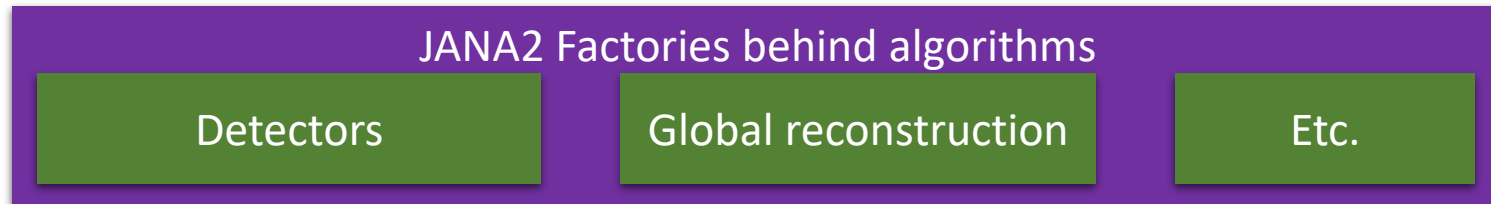


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