



# ROSIN QUALITY ASSURANCE INITIATIVES FOR ROS

**IT UNIVERSITY OF COPENHAGEN**

*Adam Alami & Zhoulai Fu*

[rosin-project.eu](http://rosin-project.eu)

# Working Group



# Initiatives

Iterations	ROSIN Initiatives	No. Of vote points
<b>Iteration 1</b>	Make ROS packages quality visible.	42
	Appoint ownership	32
	Energize the code review process	32
	Implement a code scanning method and tool	31
	Maintenance issues	31
<b>Iteration 2</b>	Energize Continuous Integration	31
	Quality Hub website	30
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	Onboarding process for core and non-core community members	29
<b>Iteration 3</b>	Model-in-the-Loop testing	28
	Implement a continuous improvement process	26
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	Quality Discourse	23
<b>Iteration 4</b>	QA promotion events	19
	Model Driven Development	18
	#ROSQA	15

# Initiatives

Problem/Opportunity Statement	Initiatives				
	Name	Description	The change impact magnitude	Expected Community Impact	
Lack of centralized source for community quality assurance practices, knowledge and collaboration.	Quality Hub website	A single source of truth for ROS QA knowledge, practices, tools and methods.	Minor	QA Feature/Capability QA knowledge sharing.	Community Impact <ul style="list-style-type: none"> <li>Inspire people to share knowledge and experience.</li> <li>Foster knowledge sharing behavior.</li> </ul>
	Quality Discourse	QA Forum	Minor	QA Collaboration platform.	Inspire people to collaborate on QA themes and issues.
Absence of ownership for QA practices.	QA ownership	Appoint ownerships for QA practices, tools and infrastructure.	Medium	Ownership	Motivate and encourage ownership behavior.
Inconsistent practice of code review	Energize the code review process	Code review is an existing process; unfortunately, it is loosely implemented and practiced. The aim of this initiative is to bring this practice back to ROS QA core quality practices. Review the current process. Update the current process to reflect the SE practices. Implement it in ROS and ROS-I.	High	Code review process	<ul style="list-style-type: none"> <li>Higher software quality</li> <li>Knowledge sharing</li> <li>Early detection of defects</li> </ul>
	Code scanning	Implement a code scanning method and tool.	High	Code scanning tool and process	New software engineering practice in the community
Deviation from software engineering and industry practices.	Energize Continuous Integration	This initiative is to review and enhance the current implementation of the current Continuous Integration (CI) services.	High	Continuous Integration Service.	New software engineering practice in the community

# Initiatives

## Making ROS Packages Quality Visible



### Description of the initiative:

Create a process/tool where packages quality can be measured, assigned and displayed.



### Intent:

Make ROS packages quality visible



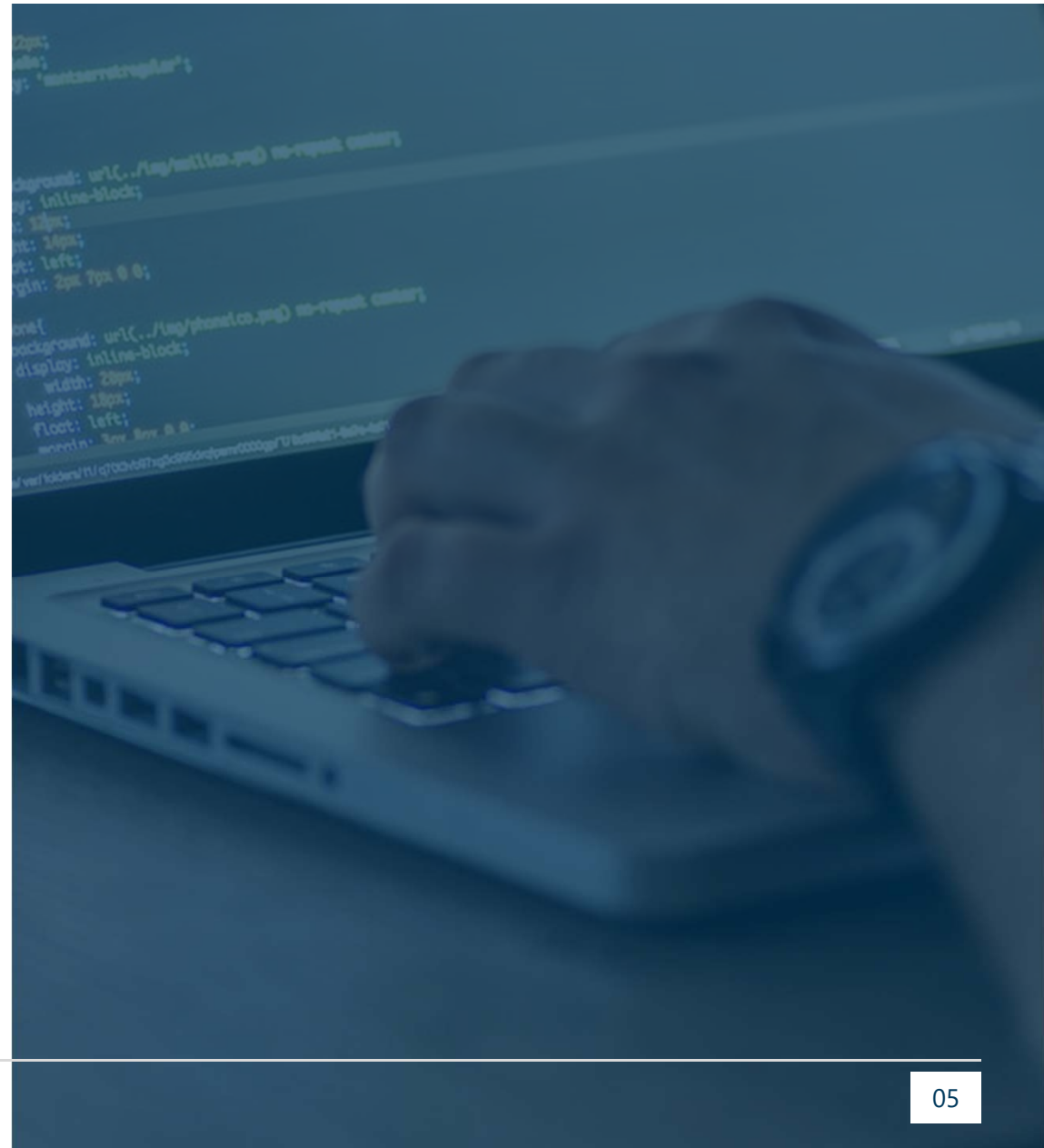
### Status:

Phase I: The CI badge is implemented.  
Phase II: The quality dashboard is work in progress.

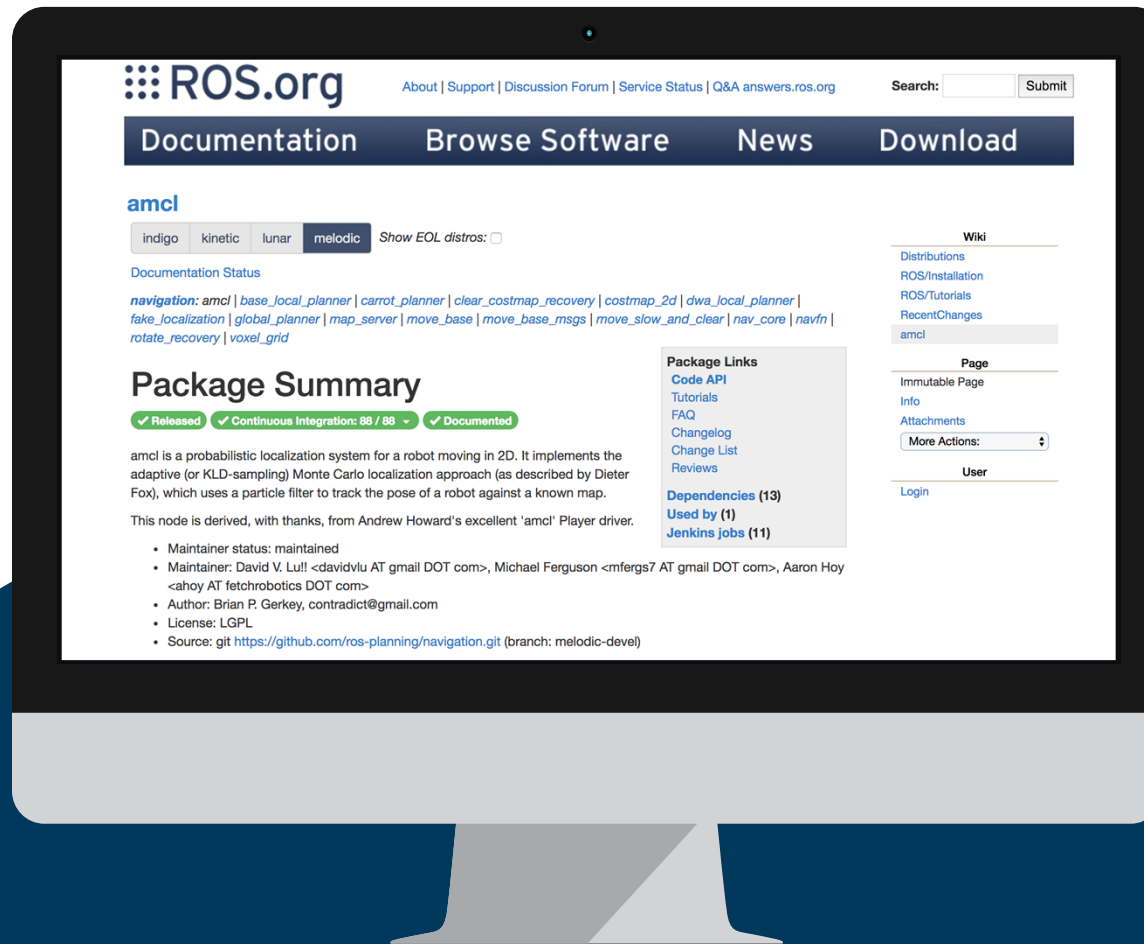


### To do(s):

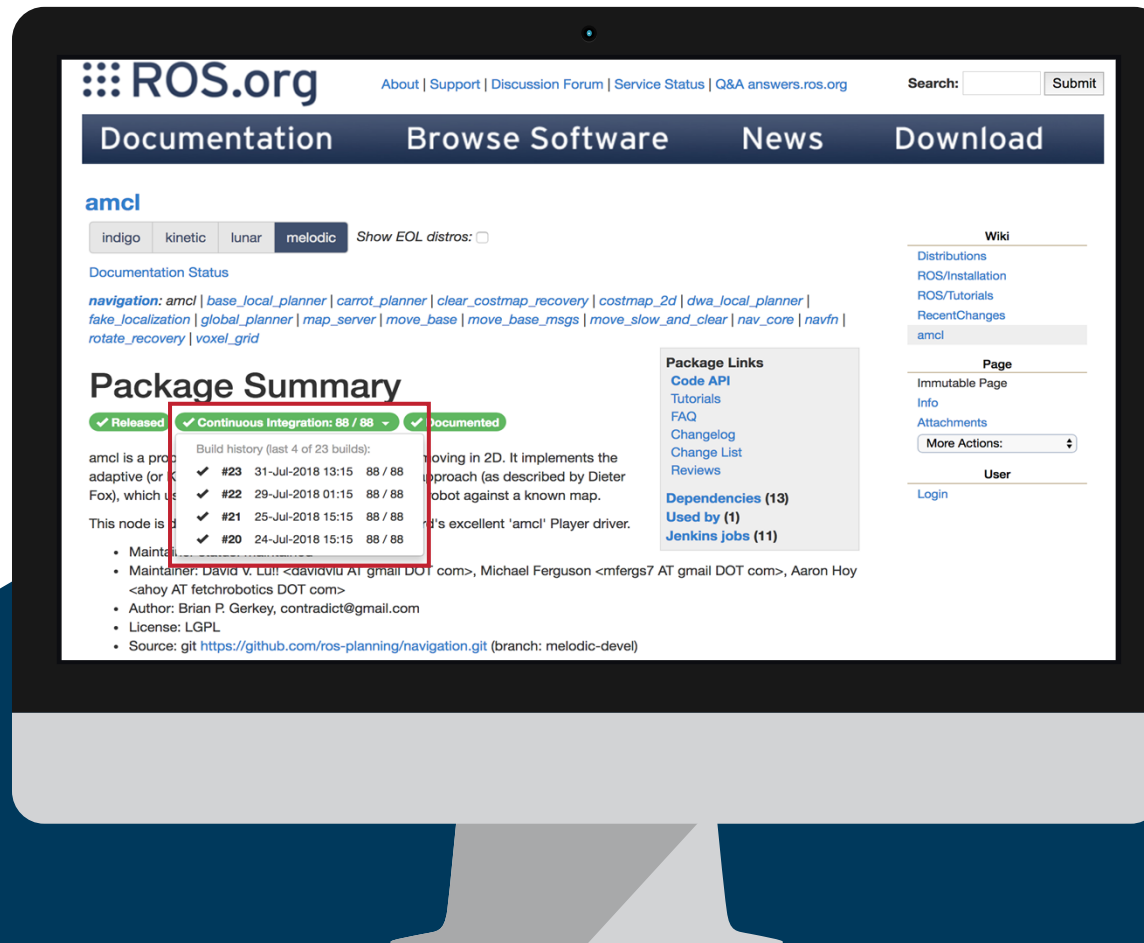
Integrate the GUI of the quality dashboard to Haros.  
Implement user rating



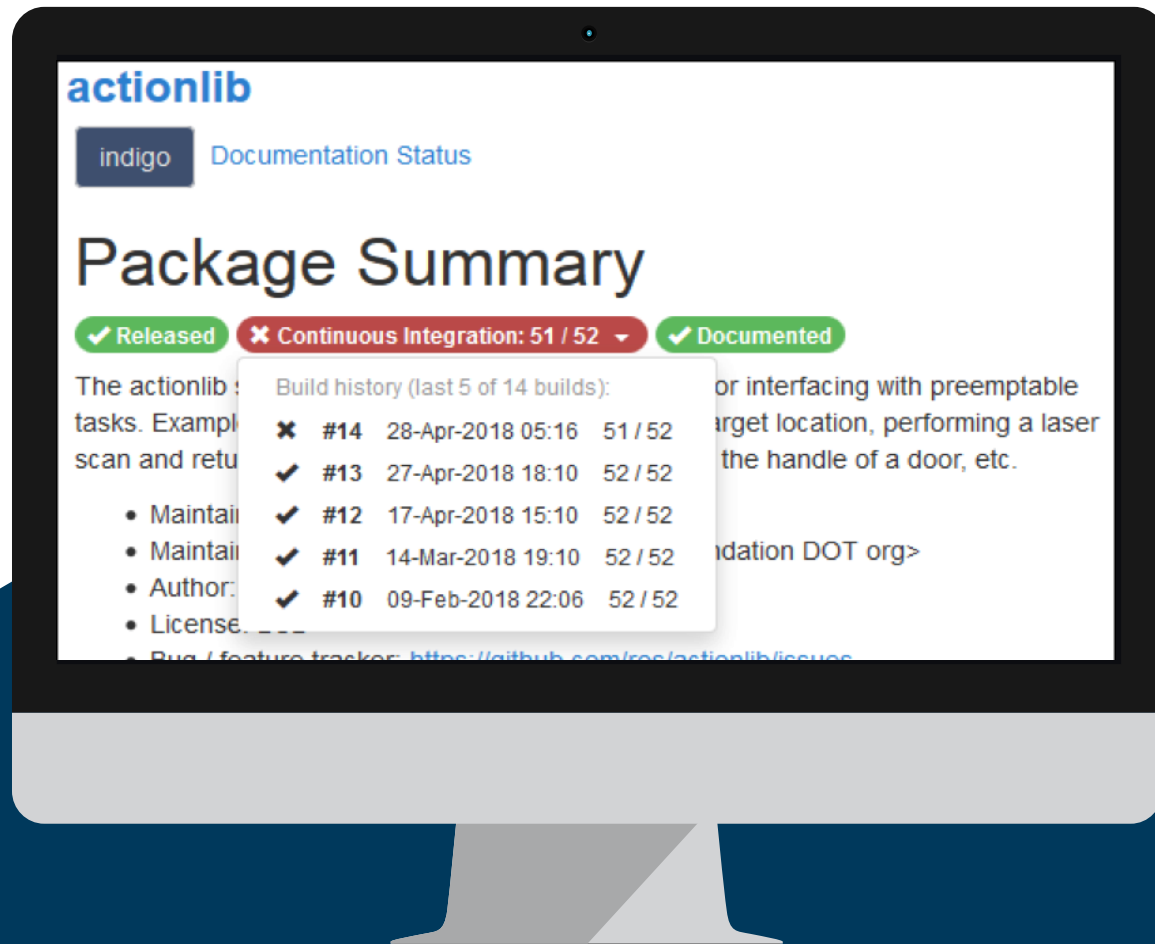
# Initiatives



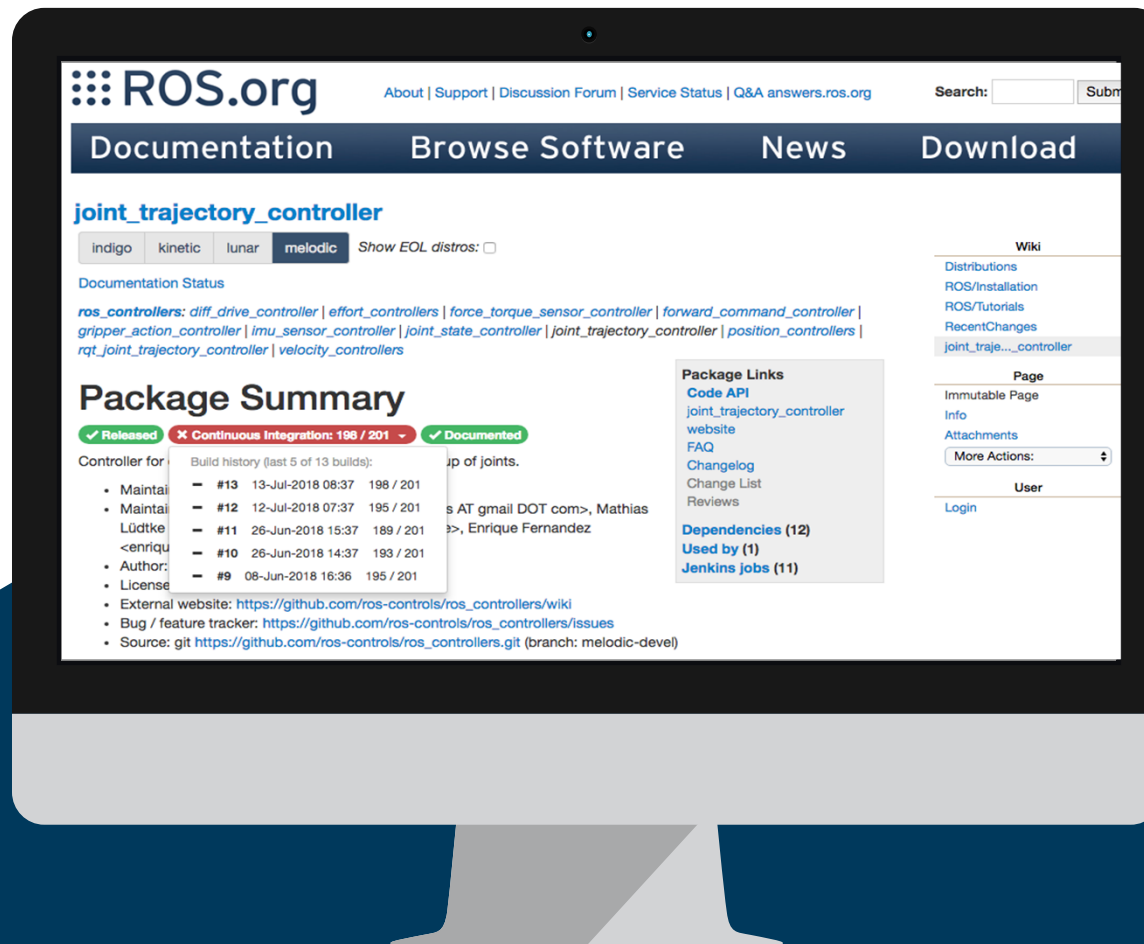
# Initiatives



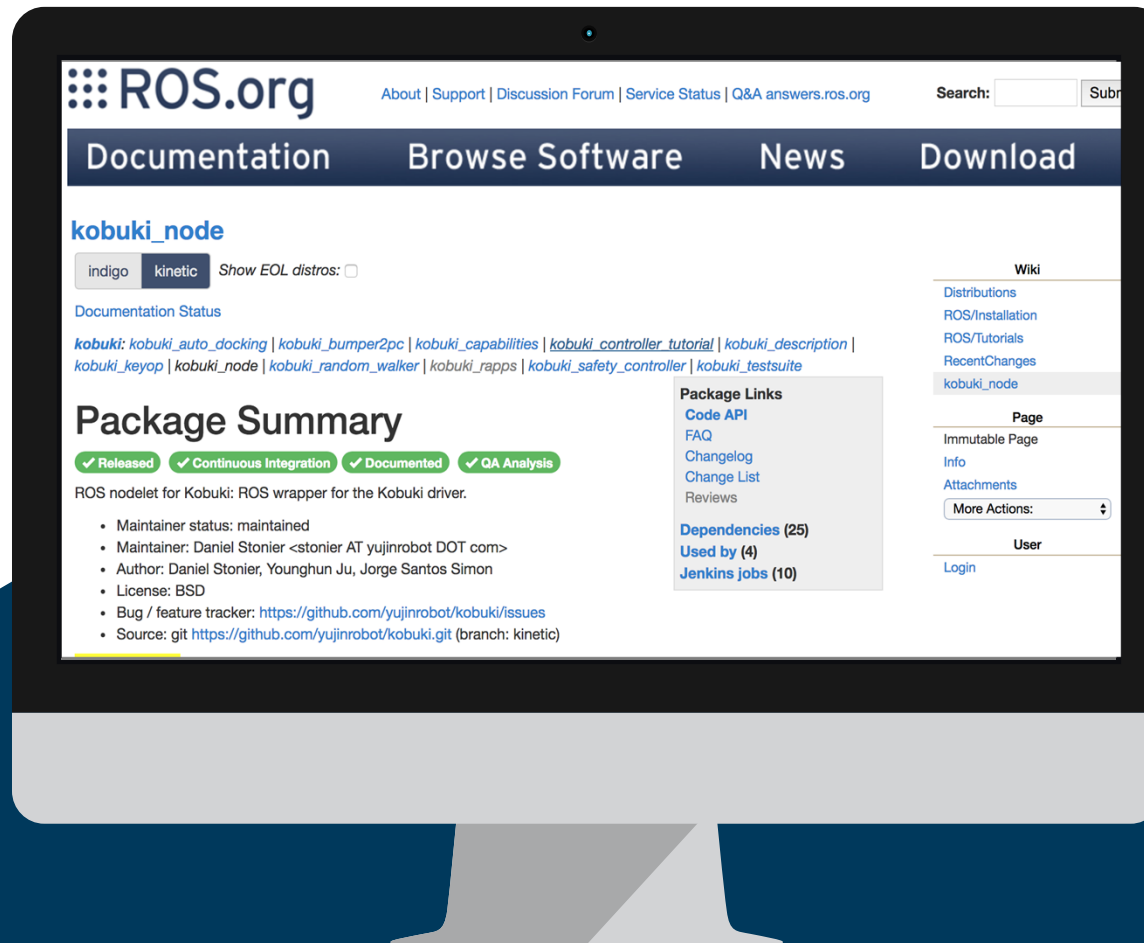
# Initiatives



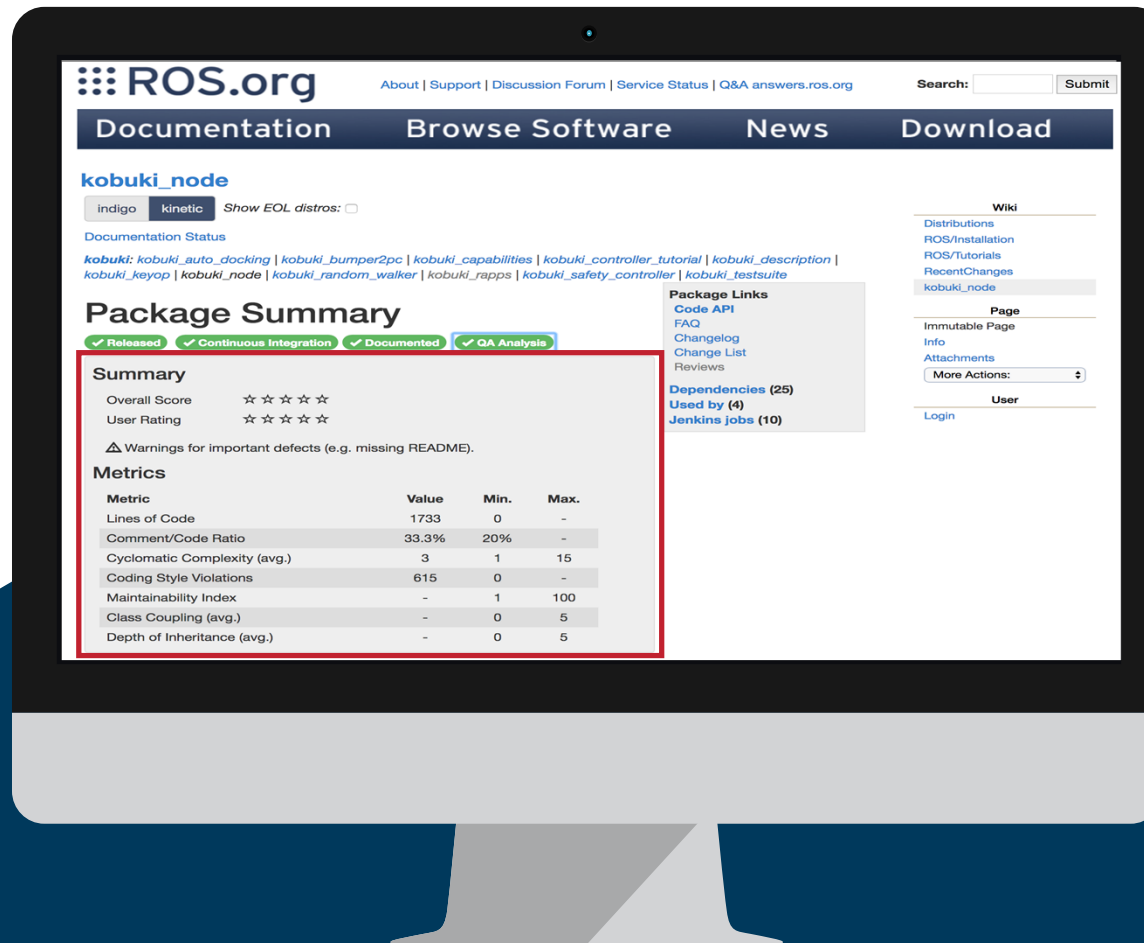
# Initiatives



# Initiatives



# Initiatives



# Initiatives

## Appoint Ownership



### Description of the initiative

Appoint ownerships for QA practices, tools and infrastructure.



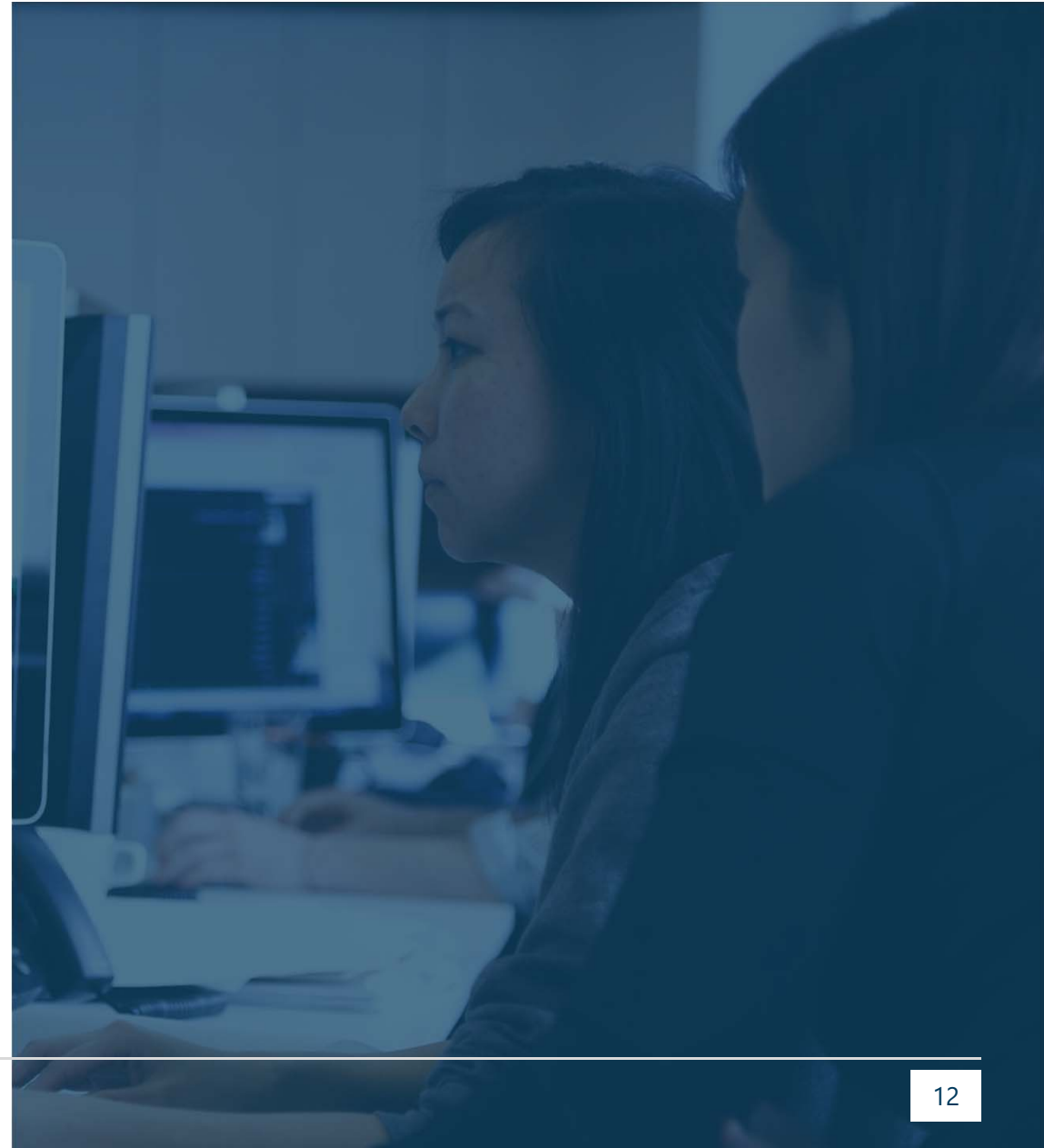
### Intent

Establishing ownership of QA practices to ensure continuity



### Status

Implemented. A decision has been made by the ROS Quality Working Group to ask the individual(s) who work on the implementation of the initiative to be the default owners.



# Initiatives

Energize the code review process.



## Description of the initiative:

Reinstitute the code review practice.



## Intent:

Code Review is a prominent QA practice in open source



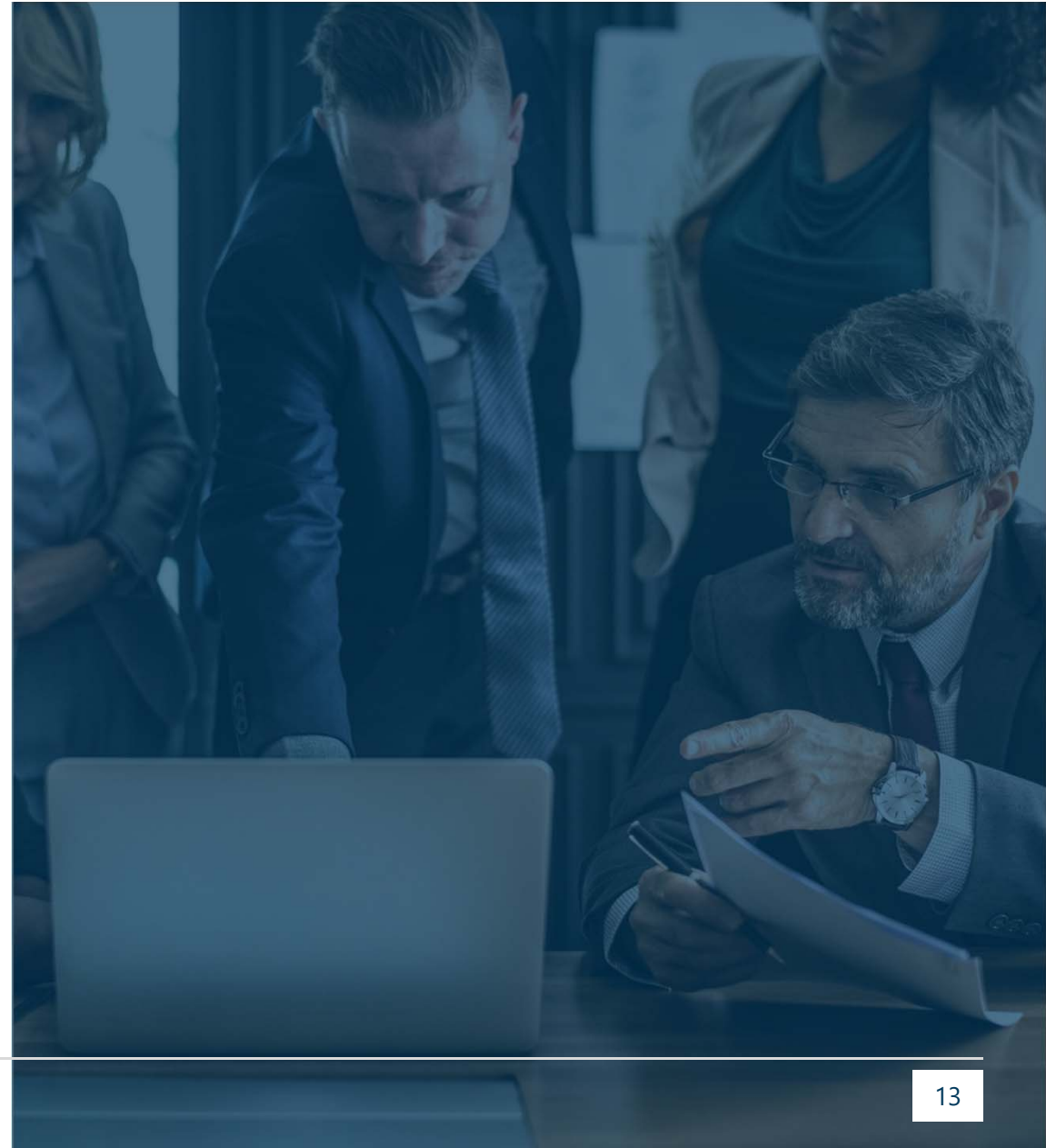
## Status:

In progress. A decision has been made to use within same repository/organization review. This to ensure the right expertise of reviewers.



## To do(s):

Code Review Guideline  
Commence the pilots in two repositories  
(Movelt and rviz)



# Initiatives

Implement a code scanning method and tool

## Description of the initiative



Haros will be able to build a representation of ROS software code that include Python and not only C++.  
Improve this representation with reliable name resolution.



## Status

The build work has commenced.

```
78 . ltrim(preg_replace('/\\\\\\\\/', '/', $i
79
80 $_SESSION['_CAPTCHA']['config'] = serialize($captcha_con
81
82 return array(
83     'code' => $captcha_config['code'],
84     'image_src' => $image_src
85 );
86 }
87
88 if( !function_exists('hex2rgb') ) {
89     function hex2rgb($hex_str, $return_string = false, $separator = ',') {
90         $hex_str = preg_replace("/[^0-9A-Fa-f]/", '', $hex_str);
91         $rgb_array = array();
92         if( strlen($hex_str) == 6 ) {
93             $color_val = hexdec($hex_str);
94             $rgb_array['r'] = 0xFF & ($color_val >> 0x10);
95             $rgb_array['g'] = 0xFF & ($color_val >> 0x8);
96             $rgb_array['b'] = 0xFF & $color_val;
97         } elseif( strlen($hex_str) == 3 ) {
98             $rgb_array['r'] = hexdec(str_repeat(substr($hex_str, 0, 1), 2));
99             $rgb_array['g'] = hexdec(str_repeat(substr($hex_str, 1, 1), 2));
100             $rgb_array['b'] = hexdec(str_repeat(substr($hex_str, 2, 1), 2));
101         } else {
102             return false;
103         }
104     }
105     return $return_string ? implode($separator, $rgb_array) : $rgb_array;
106 }
107
108 // Draw the image
109 if( isset($_GET['c']) ) {
110     $code = $_GET['c'];
111     $image_src = $captcha_config['image_src'];
112     $image_data = file_get_contents($image_src);
113     $image_size = getimagesize($image_data);
114     $image_type = $image_size['mime_type'];
115     $image_headers = array('Content-Type: ' . $image_type);
116     header($image_headers);
117     echo $image_data;
118 }
```

# Initiatives

Quality Hub website.



## Description of the initiative:

A central “go-to” place for QA (like Mozilla) knowledge sharing (documentation of QA practices)



## Intent:

Create a source of knowledge for quality assurance



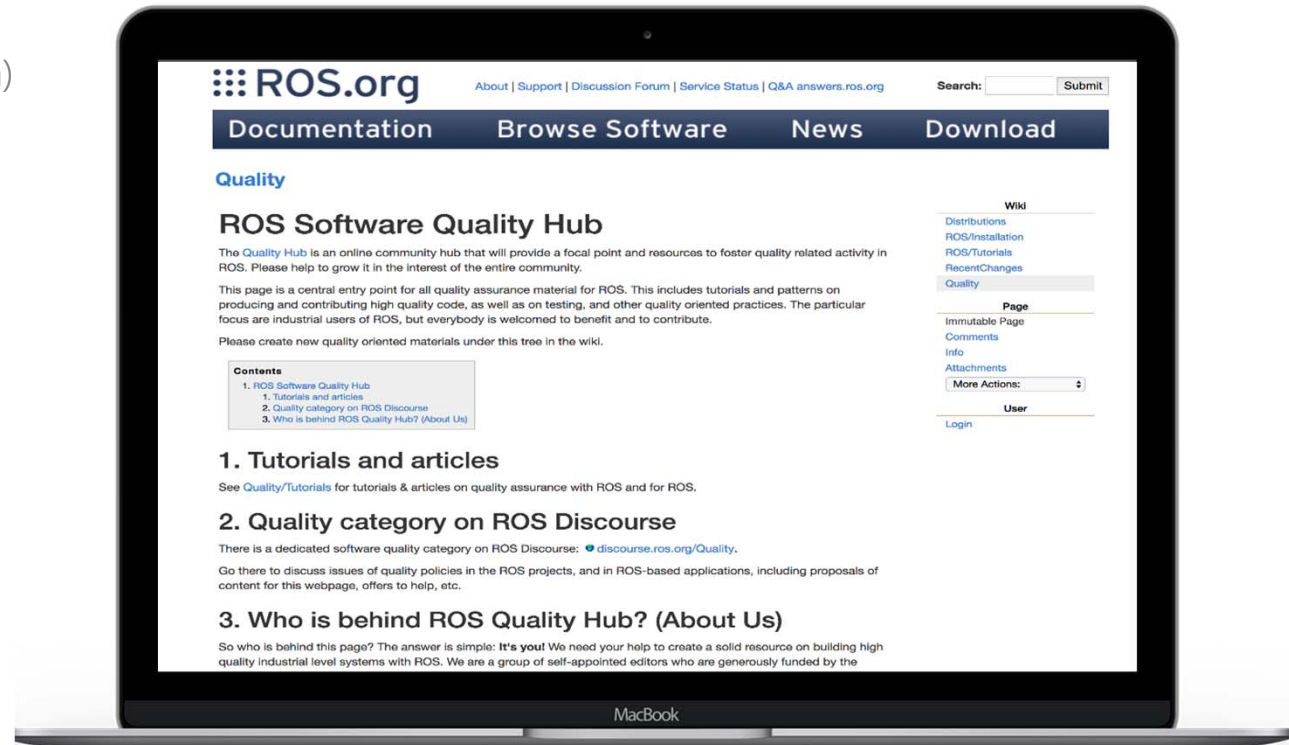
## Status:

Implemented  
<http://wiki.ros.org/Quality>



## To do(s):

Contributions to the hub.



# Initiatives

## Quality Forum.



### Description of the initiative:

A central “go-to” place for QA discussions



### Intent:

Create a source of collaboration for quality assurance



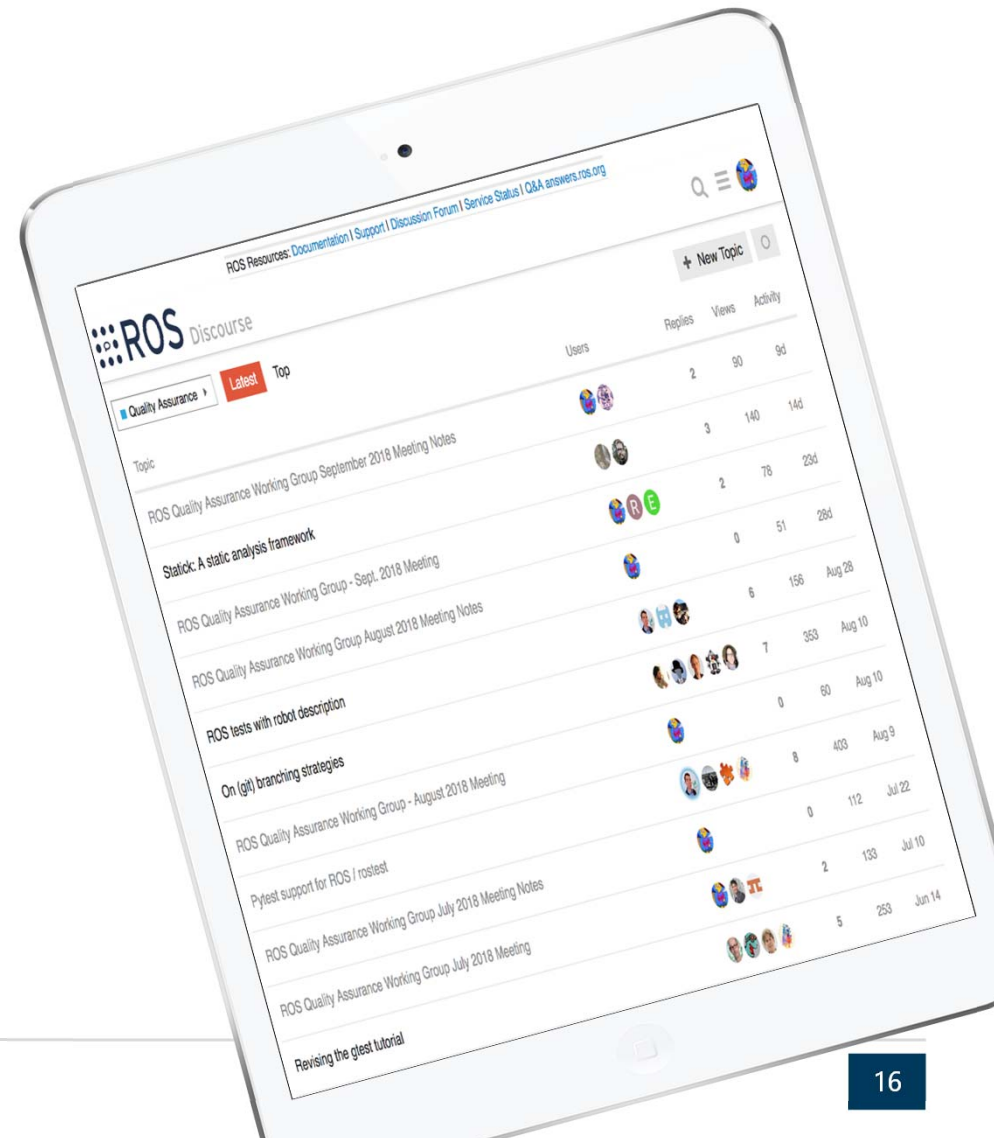
### Status:

Implemented  
<https://discourse.ros.org/c/quality>



### To do(s):

Contributions to the forum.



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# Help Wanted



**Adam Alami**  
[adaa@itu.dk](mailto:adaa@itu.dk)





# ANY QUESTIONS