



arm

Mbed Silicon Partner Workshop

Mbed OS Collaboration and Working Models

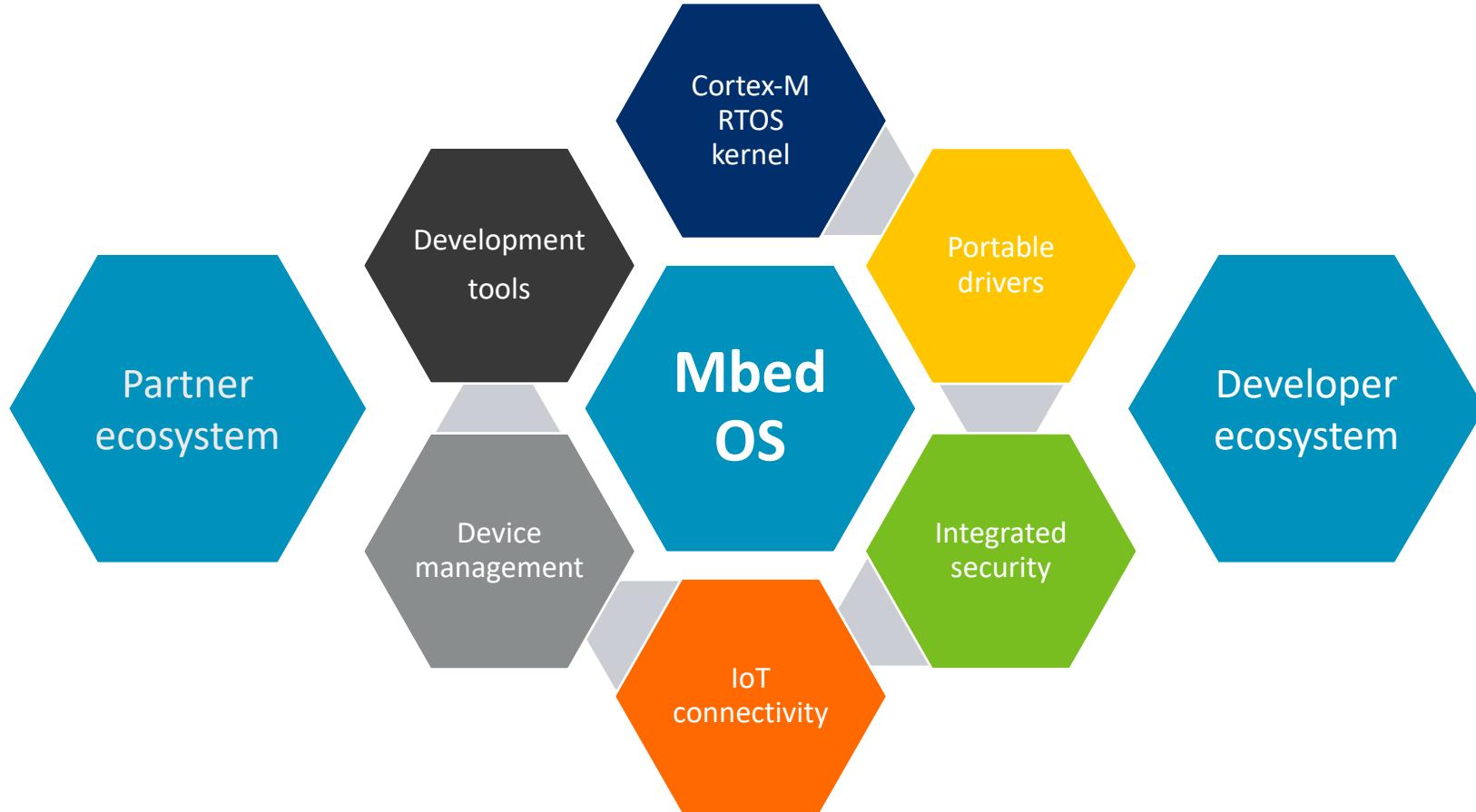
Agenda

- Mbed OS and ecosystem overview
- Development model
- HAL improvements
- Contribution workflow

Mbed OS overview

Mbed OS

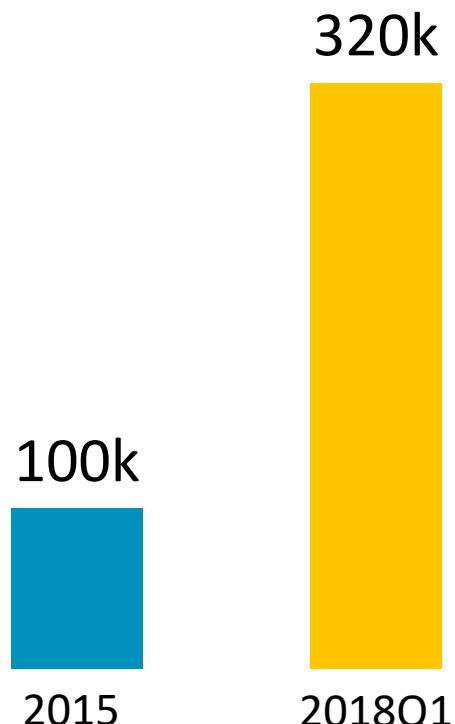
A free, open source Platform OS targeting IoT end node devices



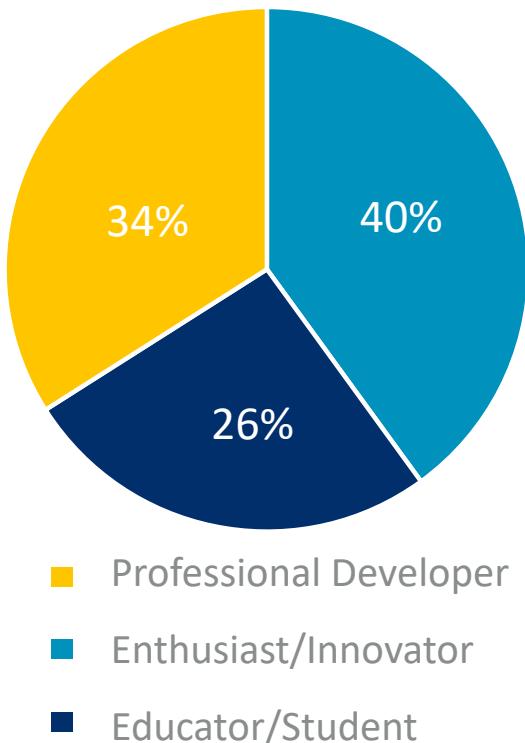
Developer ecosystem

Growing a powerful channel to IoT product developers

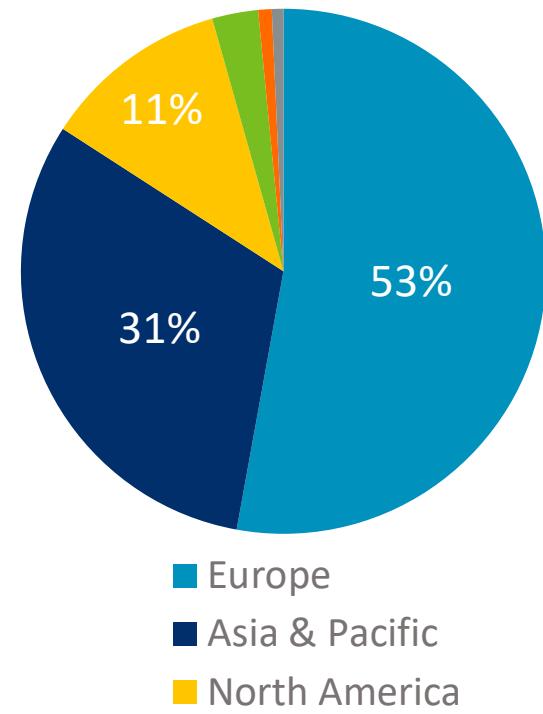
Accelerating developer ecosystem growth



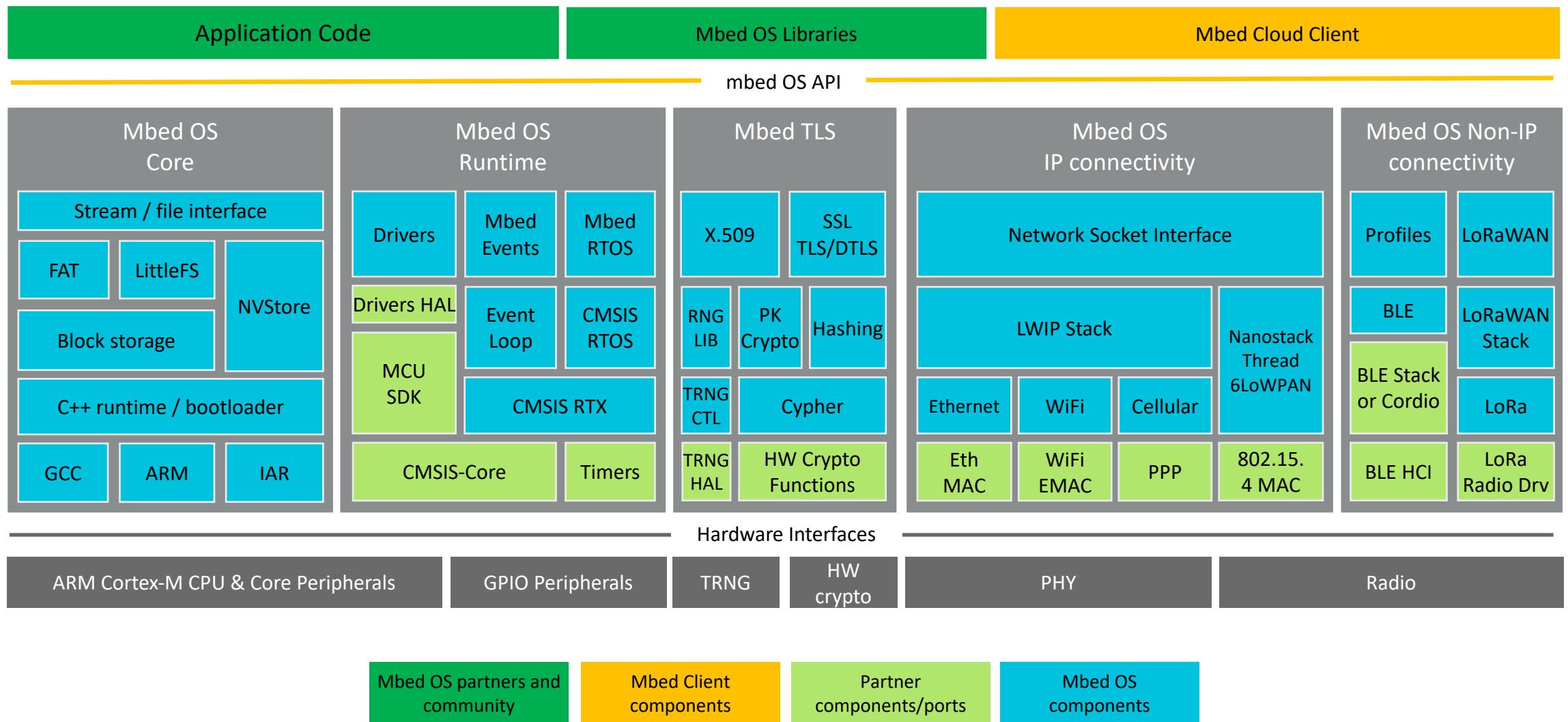
A third of developers are professionals



A global footprint



Mbed OS architecture components



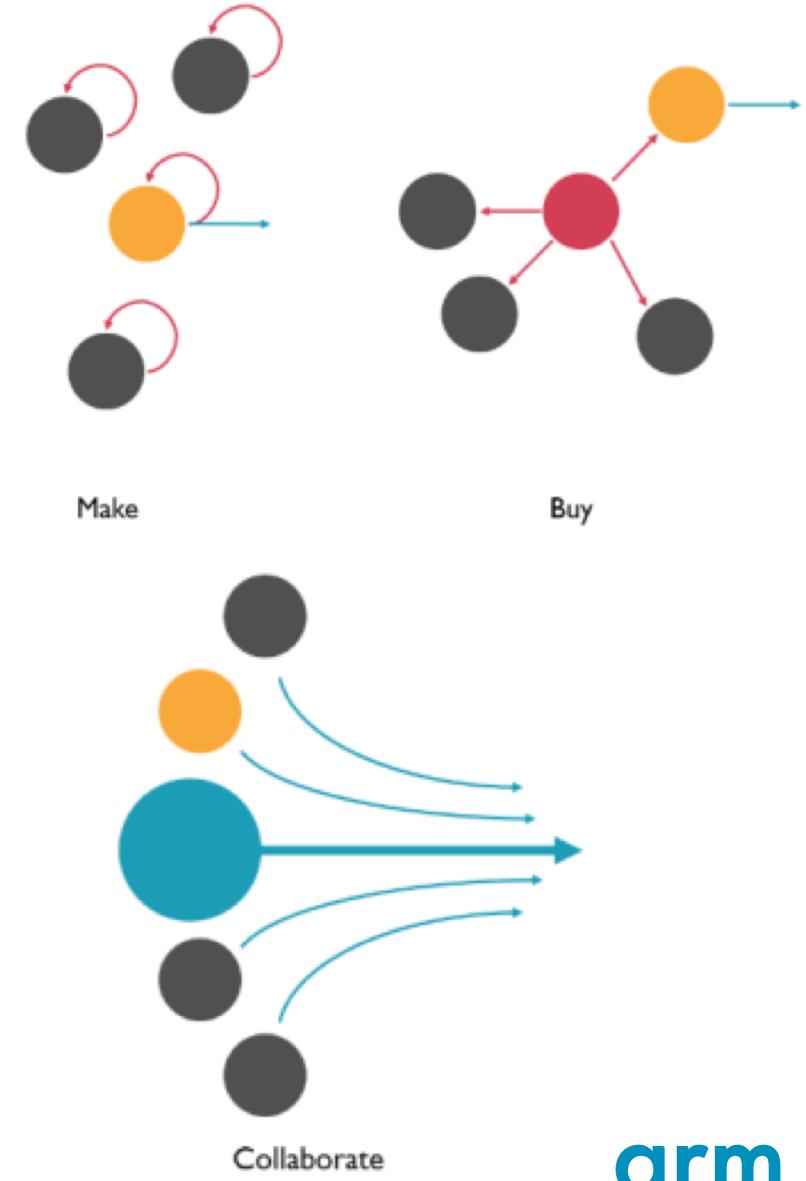
Development Model

Development model

Mbed OS is an open source project developed by Arm, Partners, and a worldwide developer community.

Building Mbed OS in collaboration allows:

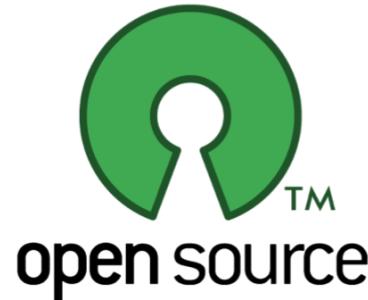
- Increased effect of the effort put into it
- Increased overall developing power
- Increased reach and network effects
- Focus on individual core capabilities



Progress

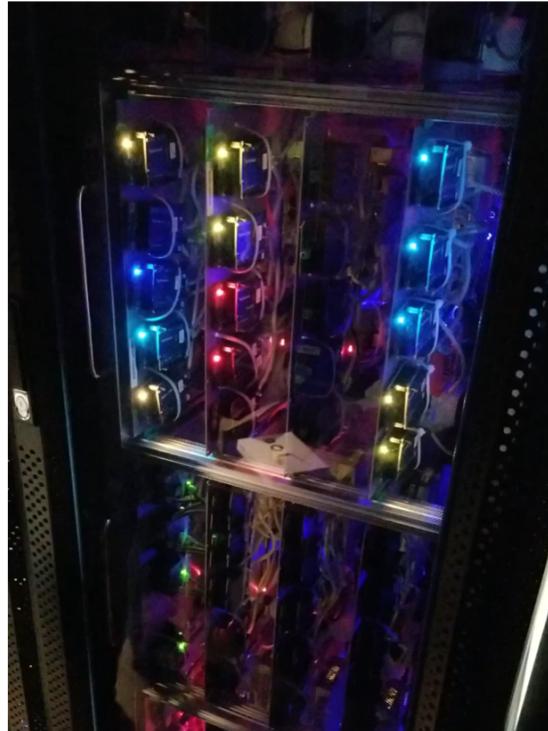
The benefits of open source plus the security of commercial development

Open source development



Mbed OS code developed publicly on GitHub

Continuous integration



Automated testing of every enhancement

Every year...

4 Feature releases and 26 Patch releases

100% of releases made on time (+/- 2 days)

4500+ commits

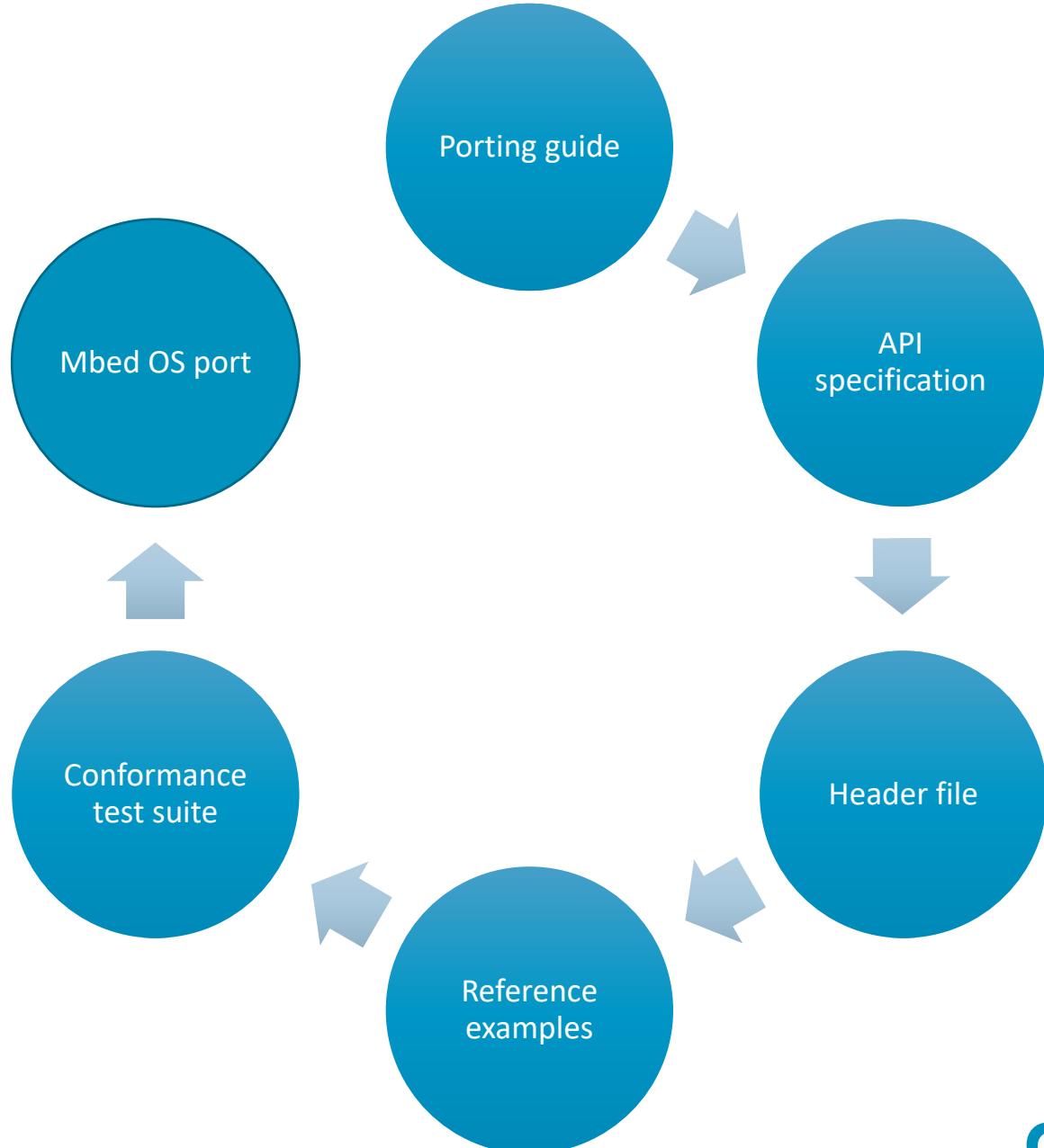
Contributions from 400+ engineers



HAL improvements

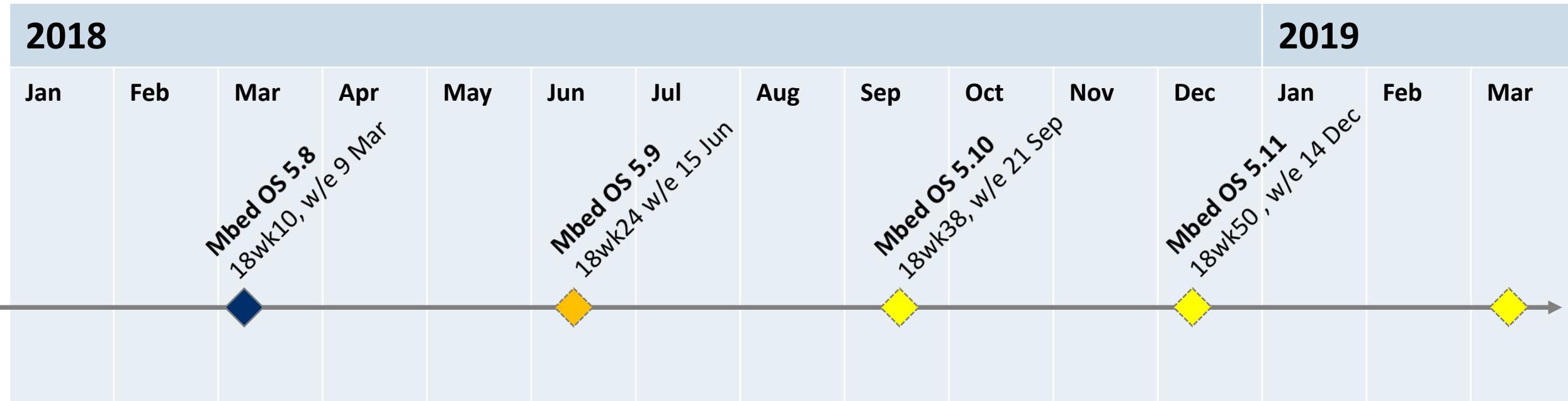
Mbed OS HAL

- All Mbed OS HAL APIs will be improved over time
- Porting guide that leads vendors through the porting process
- Clear API specification, stating defined and undefined behaviors
- Reference implementation
- Conformance tests cases



Mbed OS 5.9

Branch	Notes	Target release date
feature-hal-spec-rtc		5.9
feature-hal-spec-ticker		5.9
feature-hal-spec-sleep		5.9
feature-watchdog		5.9
feature-armc6		5.9



Mbed OS 5.10 and beyond

Branch	Notes	Target release date
criticalsection		5.xx
feature-hal-spec-sai		5.xx
feature-qspi		5.xx
feature-cpuid		5.xx
feature-emac		5.xx
feature-spm		5.xx
feature-opaque-keys		5.xx



Forum » Upcoming Features

Forum: Upcoming Features

Please [log in](#) to post a new topic.

Topic		Replies	Last post
[feature-nrf528xx] Nordic NRF52 series upgrade to SDK 14.2	 feature, nrf52832, nRF52840	13	4 days ago by Marcus Chang
[feature-hal-spec-sleep] Improvements to HAL Sleep API	 feature, HAL, low power, Sleep	0	8 days ago by Bartek Szatkowski
[feature-hal-spec-rtc] Improvements to RTC HAL API	 feature, HAL, RTC, time	0	8 days ago by Bartek Szatkowski

Forum statistics

Topics: 3

Posts: 16

Contribution workflow

Master branch

All changes against master – gateway to a release

Features can land on master when ready

- Should come from a feature branch

Master is our development branch

- Protected
- Bleeding edge

Caution: regressions are possible

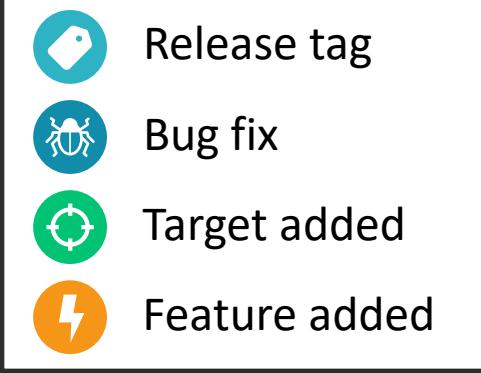
	Release tag
	Bug fix
	Target added
	Feature added



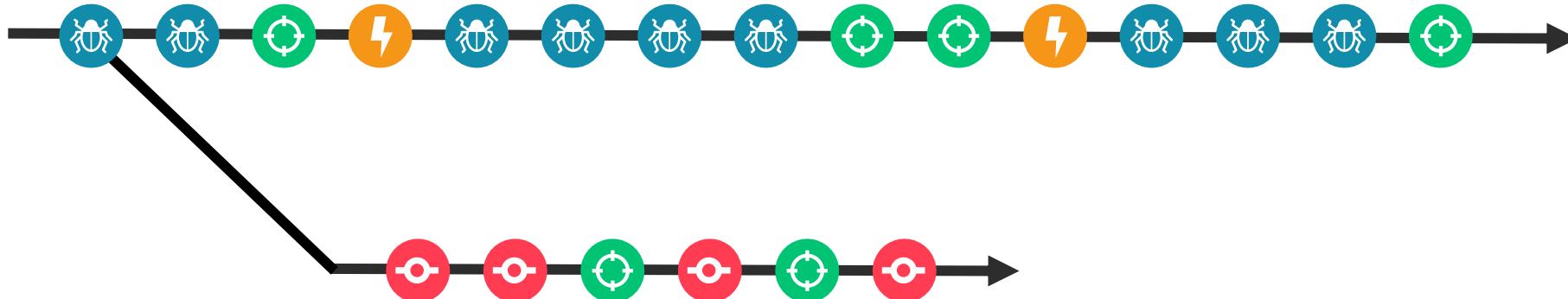
Feature branch

Public development of something new

- Great place to collaborate
- Add new target support to a feature



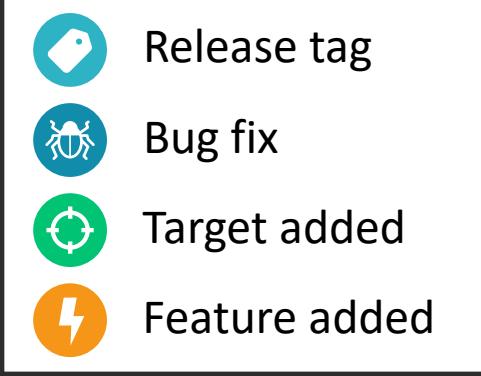
Feature owner responsible for branch maintenance



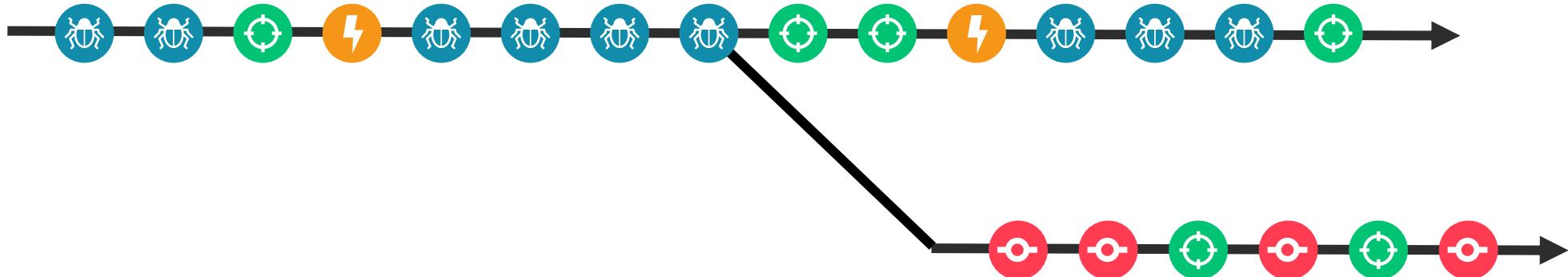
Feature branch

Public development of something new

- Great place to collaborate
- Add new target support to a feature



Feature owner responsible for branch maintenance



Rebased against master to pull in fixes and features

- Also allows continuous testing to verify compatibility and ease integration

Release branch

Only one release branch actively maintained

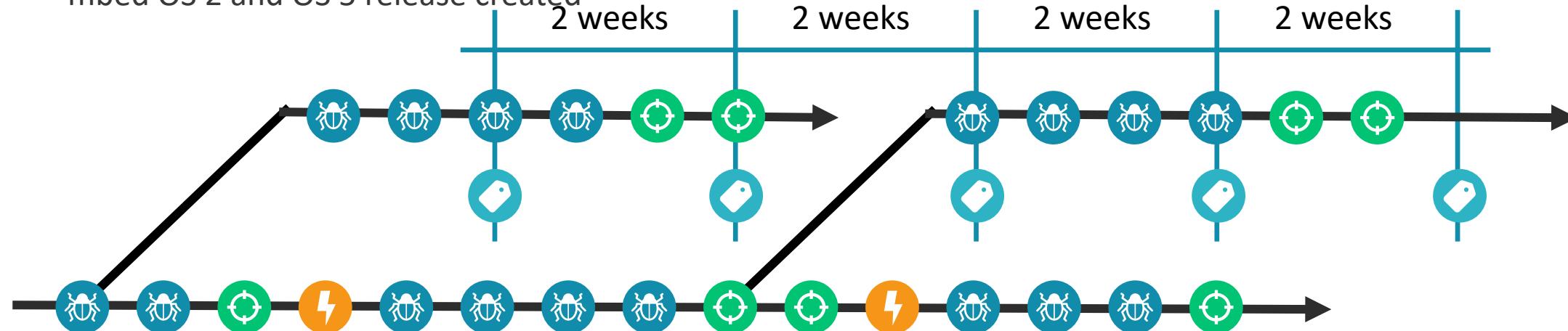
- Automated release process procures release branch

Tags are only on a release branch

- Floating tag named **latest** will move across branches

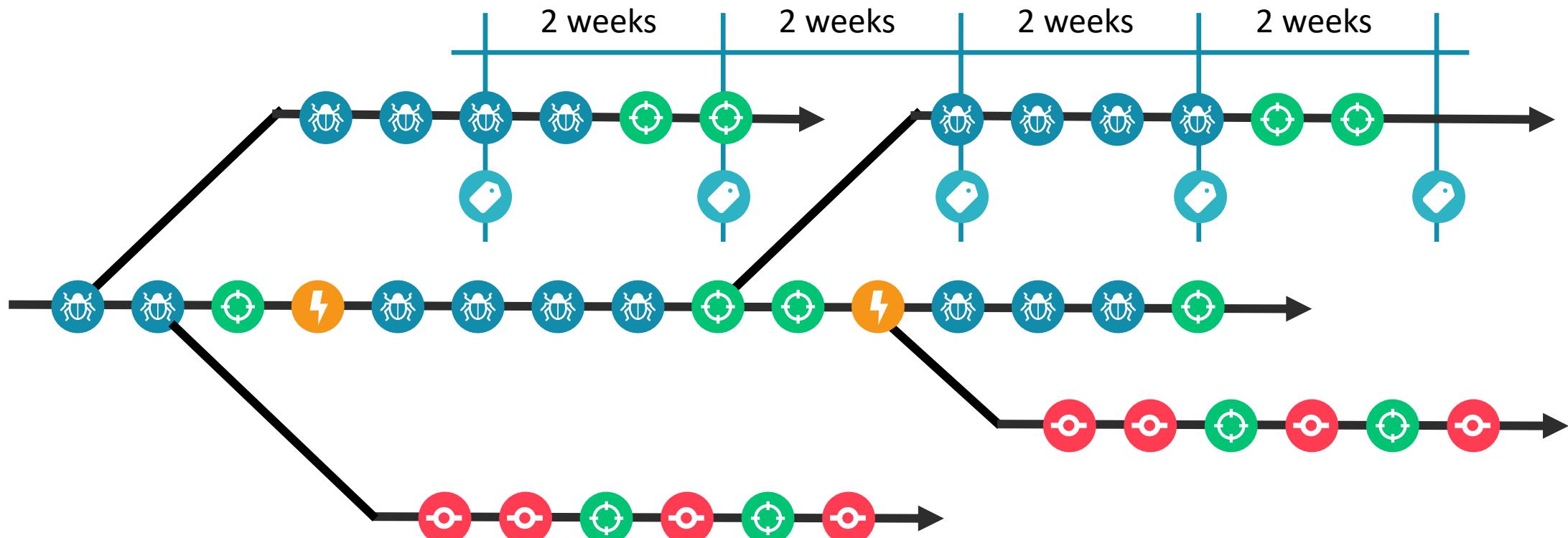
Patch level release every 2 weeks

- mbed OS 2 and OS 5 release created



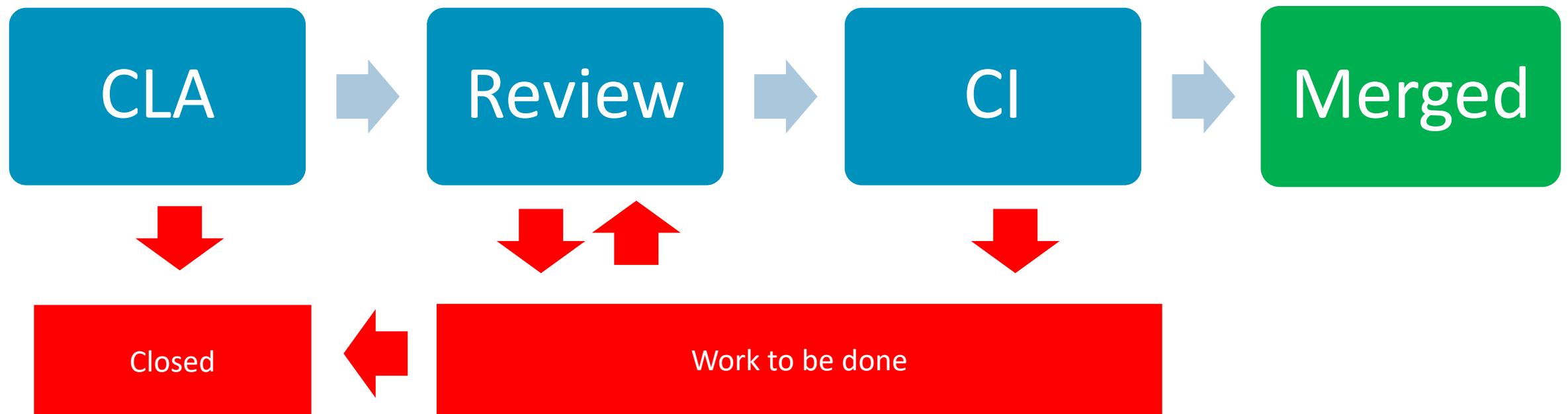
	Release tag
	Bug fix
	Target added
	Feature added

Tree



Pull request process

Link to os.mbed.com/docs/workflow



Pull request progress

Add Issue

Filter Board

No Label 449

Do not merge 4

- 5031 Tickless implementation 2
- 5019 Fix an incorrect comment in ticker API
- 4846 DRAFT: Integrate mbed OS RTC with mbed TLS
component: tls mirrored tracking
- 4719 mbed Enabled certificate for the VBLUno51 board

Needs work 15

- 5108 Add simple change impact detection script for CI
- 5104 add support for SILICA_SENSOR_NODE platform
- 5097 Adi cog candidate
- 5060 BLE: Cordio port
- 5058 CircularBuffer(): get available transactions
- 5050 Extended CAN fix
- 5028 Add support for various ticker implementations
- 5022 Add JSON schema based validation to mbed config script
- 5006 Extends test set for Ticker class

Pending review 29

- 5137 Added support for ADI EV-COG-AD3029LZ platform.
Scope: new-target
- 5130 STM32: Freeze master timer on stop/breakpoint
- 5123 Extends test set for Thread signals
- 5113 STM: I2C: Configure pins in OpenDrainNoPull by default (no pullup)
- 5106 Timeout tests
- 5105 [Cortex-M33] Added RTX5 context switcher files
- 5100 Modify description of set_time() function.
- 5099 Move clock() function from mbed_RTC_time.cpp to mbed_retarget.cpp.
- 5088 Extends test set for Ticker class

In testing 32

- 5140 Release candidate for mbed-os-5.6.0-rc2
- 5138 Fix redefinition of mbed TLS error codes
- 5098 Doxygen comment fix for Thread class
- 5096 Remove direct use of us and lp ticker from tests
- 5095 Release deep sleep lock in destructor of Timer class
- 5089 STM32 : Disable HSE XTAL choice from the default clock source
- 5084 Allow exporters for NUCLEO_L486RG
- 5080 mbedTLS: Disable MD5, SHA1, SHA256 HW ACC for STM32F439xl
component: tls release-version: 5.6.1
- 5077 Added interface version information to mbed detect

Ready for merge 2

- 5061 Travis: Fix requirements install
- 4684 Add thread terminate hook

Pull request verification

All green policy, even for feature branches

- /morph build – arm, iar, gnu
- /morph export-build – mdk, iar, make, eclipse
- /morph uvisor – uvisor testing
- /morph mbed2-build – mbed 2 testing
- travis-ci/docs – doxygen verification
- travis-ci/events – event loop profiling
- travis-ci/littlefs – filesystem profiling
- travis-ci/tools – unit testing for tools

The screenshot shows a GitHub pull request verification page with a green header bar. The main content area displays several status checks:

- Changes approved**: 2 approving reviews by reviewers with write access. [Learn more](#).
- All checks have passed**: 11 successful checks
 - ci-morph-build — build completed
 - ci-morph-exporter — build completed
 - ci-morph-mbed2-build — build completed
 - ci-morph-test — test completed
 - continuous-integration/jenkins/pr-head — This commit looks good
 - continuous-integration/travis-ci/pr — The Travis CI build passed
 - travis-ci/docs — Local docs testing has passed
 - travis-ci/events — Passed, runtime is 10352 cycles (+1522 cycles)
 - travis-ci/littlefs — Passed, code size is 10092B
 - travis-ci/tools — Local tools testing has passed
- This branch has no conflicts with the base branch**: Merging can be performed automatically.

Buttons for "Show all reviewers" and "Hide all checks" are visible at the top right of the status section.

/morph test logs and results

[http://mbed-os.s3-website-eu-west-1.amazonaws.com/?prefix=](http://mbed-os.s3-website-eu-west-1.amazonaws.com/?prefix=builds/6441/)

mbed-ci commented 3 days ago

Member + 😊 ...

Build : SUCCESS

Build number: 1549

Build artifacts/logs : <http://mbed-os.s3-website-eu-west-1.amazonaws.com/?prefix=builds/6441/>

Triggering tests

/morph test
/morph uvisor-test
/morph export-build
/morph mbed2-build

Thank You!

Danke!

Merci!

谢谢!

ありがとう!

Gracias!

Kiitos!

감사합니다

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