

Management of UKCA bug fixes

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The problem

1. Keeping track of all bug reports and fixes
2. Ensuring the bug fixes are available
 - a. At all relevant versions of the UM
 - b. In all relevant repositories
3. Ensuring all jobs have all the required bug fixes
4. Getting bug fixes lodged in a timely manner

The solution

This proposal relies heavily on the use of Trac tickets, and may seem to be complex at first sight. What is clear however is that we cannot go on the way we are working at the moment and we need a more organised system. Ultimately using tickets should be a better way of managing bug reports and fixes.

A single point of bug reporting

Part of the problem is a lack of a clear way to report bugs, which is the same for all UKCA users, wherever they work. There should be a single Met Office email address ukca_bugs@metoffice.gov.uk. There will be a small group who will take turns to monitor this mailbox.

One ticket on each system per bug

As per standard UM working practice, there needs to be a single Met Office ticket for each bug which will be copied across to the PUMA trac system. Each ticket will record the bug, the impact and branches at all versions where it needs to be fixed. On the Met Office system once a bug fix is lodged the branch will be closed as normal. The PUMA ticket will probably not be closed but a note will be added to them indicating at what UM version the bug is fixed.

One bug fix package branch per system per version

To make it easier to use the bug fix branches, a single bug fix package, with its own ticket, will be prepared for each UM version. This will grow over time as bugs are found and the ticket will never be closed. Each bug fix branch will first be tested on its own and then merged into the package. The ticket will record in the summary which other tickets the branch includes. I would suggest that we only support vn8.2 onwards – the responsibility at 7.3 for is with the owner of the 7.3 package branches

UKCA wiki

The UKCA wiki will still play a role as a central point of information. At the following page: http://www.ukca.ac.uk/wiki/index.php/Bugfixes_%28new_approach%29 are two tables: one listing all known bugs and a second one to list available packages with bug fixes for specific UM versions.

The a bug fixes table is populated follows:

Description	Ticket		UM versions
	UM	PUMA	
Nick's stupid mistake	#999	#3	8.2-8.6

This will allow people to be made aware of bugs and to go to the tickets for more information on them. This will mostly be looked at by bug reporters who want to know if their report has been logged and is being acted on.

There will be a second, more important table to record the package branches. This will be all most users ever need to look at.

UM versions	Ticket	
	UM	PUMA
vn8.2	#3999	#4
vn8.3	#4999	#5

In both of the above tables, the ticket numbers should be linked to the right ticket.

This has the advantage of reducing the information needed to be stored on the wiki while still be able to find all the information if needed. Of course by 2015 we may be able to further simplify as there should only be one UM repository.

Announcements

When a new bug is added to the above list it should be announced via an email list

Implementation

There are two phases to this plan

- 1) initial set up
- 2) maintenance once the system is in place

Initial set up

This has been completed

- 1) Ensuring all known bugs have tickets on both systems.
- 2) Creating the tables on the Wiki.
- 3) Rolling out the bug fix packages to all important versions (8.2-8.6, then 9.x).

Ongoing maintenance

We need to have a standing item on the UKCA code management group to monitor

- a. Any new bugs found since last meeting – are they in both systems yet and has the information been circulated.

- b. Are any bugs missing from the package branches?
- c. How many bugs are unfixed at the head of the trunk? Is this going up or down?

Code owner responsibility

The UKCA code owner is not responsible for fixing every bug which is reported. Their role is to:

- ensure that all bugs reports are made known to the developer community through the processes described in this document
- ensure that progress towards fixing any outstanding bugs is being made, raising them at the code management group meetings as needed.
- ensure that once a fix has been developed, someone is identified to lodge it in a timely manner.

All developers should be proactive in reporting and fixing bugs as well as lodging bug fixes where possible.

Appendix 1. Automated reply from UKCA bugs mailbox.

When a message is sent to the UKCA bugs mail box the following automated reply is sent

Hello, Thank you for emailing the UKCA Bugs mailbox.

This message has been automatically generated in response to your email

If you have not already done so, please could you:

- 1) State clearly what you believe the bug to be, giving
 - a) What you believe should happen*
 - b) What does happen**
- 2) Which UM version you are using, e.g. vn7.3, vn8.4, etc.*
- 3) Which UKCA configuration you are using, e.g. AQUM, CheST+GLOMAP, etc.*
- 4) If you have found and tested a fix for the bug, please could you provide a link to a
 - a) Trac ticket detailing the fix*
 - b) FCM branch fixing the bug**

Please also check the UKCA Bugs webpage at:

[http://www.ukca.ac.uk/wiki/index.php/Bugfixes \(new approach\)](http://www.ukca.ac.uk/wiki/index.php/Bugfixes)

It may be that this bug has already been found and a fix applied. If there is anything else you need to add to your original message you can let us know that by replying to this email too.

*Thank you,
UKCA Code Management Group*