

GMAT 2015a Release Process

This page is used to track the process and progress of the R2015a release.

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Release Lead Roles

| Role | Assignee | Authority/Responsibility |
|-----------------|----------------|--|
| Release Manager | SPH | "owns" release, initiates process, creates tracking page, sends daily status updates, tracks issues to completion, makes sure everyone gets their stuff done, brings decisions to CCB/team, maintains tracking page, collects lessons learned, documents process improvements for next release. Must be reachable and preferably in the office during critical stages like creating and testing RCs. |
| Build Manager | JJKP or LOJ(?) | controls build system, creates RCs, sends RC availability announcements. Must be reachable and preferably in the office during critical stages like creating and testing RCs. |
| Test Manager | TR | control GUI/script testing for each RC. Must be reachable and preferably in the office during critical stages like creating and testing RCs. |

Open Process Questions R2015a

- Consider merging to production and test this before next release process
- Automate installer packaging
- Consider sanity check from mission users' scripts
- Feature Freeze/QA Complete/Beta Test must happen earlier (month before code/App Freeze)
 - We need to baseline the test results well before release process starts. Probably at Feature Freeze\QA Freeze
 - Consider allowing GATS to produce multiple reports from one test run
- When should we merge with production and baseline tests?

Release Risks

This is a list of all risks (opened and closed) related to smooth release of R2015a.

| Owner | Status | Description | Resolution |
|-------|--------|---|--|
| RQ | Closed | GMAT function testing is not completed so there could be many unknown issues discovered close to code freeze. | Configured test system to run regression test system in function mode and ran tens of thousands of test. |
| JJKP | Open | Many failing event location tests. There may be hidden bugs because issues have not been resolved. | |

| | | | |
|-----|------|---|--|
| DJC | Open | Python interface unstable. Process for testing and integration into nightly build is unclear. | |
| SPH | Open | Space weather file not ready for testing and tests are not written. | |

Tasks

All dates are referenced to 12:00 noon EDT.

For example, a deadline of March 15 should be interpreted as March 15, 12:00 noon EDT.

Early Tasks

These are long-lead early tasks that can be completed before the detailed release cycle.

Use "(/)" for the checkmark (✓) and "(x)" for the cross (✗)

| Task | Who | Status | Internal Status | Notes |
|---|-------------|--------|-----------------|---|
| Review Previous Build Release R2015b Process Notes | All | | | |
| Obtain Release Approvals | SPH | Done | Done | Needed by release day. |
| Get updated legal statement/license | SPH | Done | Done | Needed by Code Freeze. |
| Update sample scripts | SPH | Done | Done | Needed by App Freeze. <ul style="list-style-type: none"> Write examples that demonstrate new functionality Clean up all errors and warnings Remove deprecated fields |
| Write draft Release Notes | JJKP SPH | Done | Done | Needed by App Freeze. See Writing Release Notes |
| Update standard descriptive text | SPH | Done | Done | Needed by App Freeze. Will be used in User Guide, websites, release announcement. |
| Update version number in User Guide cover | JJKP | Done | Done | Needed by App Freeze. Contact Katy Gammage or Mary Hrybyk-Keith to update cover page. Next time: integrate sejda-console to do this automatically. |
| Update info on public-facing websites | JJKP | ✗ | ✗ | Needed by Release Day. See the list of sites . Update this list as well, if necessary. <i>Updated major sites before announcement. Minor ones can be updated a bit later.</i> |
| Update release announcement contacts | SPH | | | Needed by Release Day. Located here . |
| Put in order for additional icons | SPH | Done | Done | (if necessary) Needed by Visual Freeze. |

For QA Complete (Sept. 16)

QA complete means that all known bugs are being tracked, all bug fixes are verified and documented, and the release process can begin.

Use "(/)" for the checkmark (✓) and "(x)" for the cross (✗)

| Task | Who | Status | Notes |
|--|--------------------|------------------------------|--|
| Verify that all known bugs are checked into JIRA | (All) | JJKP: RQ: SPH: | |
| Complete all JIRA verifications | (All) | JJKP: RQ: SPH: | |
| Complete QA wrap-up tasks | DJC, SPH, JJKP, RQ | JJKP: RQ: SPH: DJC: | <i>JJKP: Need to run save mode one last time before code freeze.</i> |
| Address all JIRA tickets awaiting feedback | (All) | JJKP: RQ: SPH: | |
| Mark .tc files with requirements and verify traceability to new requirements | (All) | JJKP: RQ: SPH: | This is new this year! |

For Visual Freeze (Oct. 5)

Visual Freeze finalizes all graphical changes to the software, so that screenshots, documentation, and TestComplete can be updated.

Use "(/)" for the checkmark () and "(x)" for the cross ()

| Task | Who | Status | Internal Status | Notes |
|----------------------|-----|--------|-----------------|--|
| Update About panel | LOJ | | | <ol style="list-style-type: none"> 1. Update release number (i.e. R2015a). 2. Add any new libraries used. 3. Update an links. |
| Update splash screen | TGG | | | <ol style="list-style-type: none"> 1. Add new contributors 2. Remove contributors who did not contribute to this release 3. Design updates 4. Update SplashScreen.psd in GmatDevelopment\moredata\graphics\splash 5. Use GIMP to save a flattened TIF file and overwrite splash screen in GmatDevelopment\application\data\graphics\splash. |

| | | | | |
|--|-------|-------------------------------------|-------------------------------------|--|
| Update icons | TGG | SPH: ✓ WCS: ✓ TGG: ✓ | SPH: ✓ WCS: ✓ TGG: ✓ | If there are any updates, additions, deletions. Including GMATIcon for Welcome Page |
| Update <code>gmat_startup_file.txt</code> | JJKP | ✓ | ✓ | <ul style="list-style-type: none"> Update formatting, comments Add any additional plugins Switch to release configuration (comment out alpha plugins) |
| Switch to release configuration in script test system | JJKP | ✓ | ✓ | <ul style="list-style-type: none"> Create new <code>rundef.R2015aInternal.template.m</code> and <code>rundef.R2015aPublic.template.m</code>. Switch <code>autorun.m</code> to use appropriate one. |
| Complete visual updates | (All) | SPH: ✓ RQ: ✓ | | |

For Code Freeze (Oct. 9)

Code Freeze is a freeze on the software itself before final testing.

Use "(/)" for the checkmark (✓) and "(x)" for the cross (✗)

| Task | Who | Status | Internal Status | Notes |
|---|-------|-----------|-----------------|--|
| Update EOP files | WCS | ✓ | ✓ | Update <code>eopc04_08.62-now</code> and run smoke tests and SPICE .bpc file |
| Update tai-utc file & naif LSK | WCS | ✓ | ✓ | Update <code>gmat_startup_file</code> with new LSK |
| Update Info.plist and RunGMAT as needed | WCS | ✓ | ✓ | Need copyright and release number/name at least |
| Update files w/ updated legal statement | LOJ | ✓ | ✓ | <ul style="list-style-type: none"> Readme file Source code files |
| Update license text | LOJ | ✓ | ✓ | Update <code>application/License.txt</code> file. Nothing to do since license did not change. |
| Update copyright and code headers | LOJ | ✓ | ✓ | <p>This tool makes adding paragraphs and changing headers simple. http://sourceforge.net/projects/findandreplace/</p> <p>As of R2015a these directories have files that need updating.</p> <p><code>public\src</code> (hpp, cpp)</p> <p><code>public\plugin</code> (hpp, cpp)</p> <p><code>public\application\matlab\gmat_keyword</code> (.m)</p> <p><code>internal\code</code> (hpp, cpp)</p> |
| Final bug fixes | (All) | ✓ | | |
| Mark all open bugs as Affects: current release | SPH | SPH: ✓ | | |

For this release: Should we branch the repo here, instead of after release? We need to allow people to continue working on unrelated items while release work is ongoing.{warning

(DJC here) A better approach going forward would be to merge master into production, and switch the test system to the production branch. This probably ought to be done right before building RC1. The dev team would have 2 options then:

1. Checkout branches based on what they are working on (i.e. checkout production for bug fixes for the release, and their current clone of master – every one is cloning for new work, right? – for ongoing work)
2. Alternatively, make bug fixes in master and cherry-pick merge changes into production as bugs are fixed

The former is the better approach, IMO, because it ensures that the bug fix is made on the current code base for the release.

For App Freeze (Oct 9)

App Freeze is a freeze on all application bundle files beyond data and code. This includes documentation, sample scripts, stuff in the `extras` folder, etc.

Use "(/)" for the checkmark (✓) and "(x)" for the cross (✗)

| Task | Who | Status | Notes |
|---|-----------------|----------------------------------|---|
| Update <code>README.txt</code> | JJKP | ✓ | Update with major release highlights. |
| Update <code>extras</code> folder | JJKP | ✓ | Notepad++ syntax coloring file |
| Update PDF files in docs folder | SPH/DJC | DJC: ✓ SPH: ✓ | <ul style="list-style-type: none"> • Update watermark: "Draft for Release R2015a" • Put into application/docs folder, and individual doc source folders |
| Gather list of compatibility changes since last release | SPH | ✓ | <ul style="list-style-type: none"> • Deprecated fields • Removed & disabled fields • Anything a user would need to know to make R2013b scripts compatible with this release. |
| Update Release Notes | SPH | ✓ | |
| Update screenshots in User Guide | (Feature leads) | JJKP: SPH: ✓ RQ: ✓ DSQ: | |
| Test User Guide instructions & code | (Feature leads) | RQ: ✓ DSQ: JJKP: SPH: ✓ | <ul style="list-style-type: none"> • Tutorials • Common Tasks • script snippets • reference page examples SPH: only tested features that changed for which I was FDE |
| Update Windows installer package | JJKP | ✓ | |
| Update links in <code>GMAT.ini</code> | JJKP | ✓ | <ul style="list-style-type: none"> • Help links • Welcome page links |
| Update link tests in <code>TestComplete</code> | TR | ✓ | <ul style="list-style-type: none"> • Help buttons • Welcome Page links • Help menu links |

Testing of Release Candidate 1 (Oct 14 - Oct. 28)

This will start with the 2014-05-05 daily build. **Repeat this phase until tests check out.** Steve will make the call.

Use "(/)" for the checkmark (✔) and "(x)" for the cross (✘)

| Task | Who | Status | Notes |
|---|--------------------------|--|--|
| Update README.txt | JJKP | RC1: RC2-RC5: N/A | <i>Next time: this should probably be "Update Release Notes" to add outstanding bugs, etc.</i> |
| Build Windows installer | JJKP (backup: TGG) | RC1: RC2: RC2-2: RC3: ✔ RC4: RC5: | Version string: R2015a-rc# <i>Next time: build manager should do this</i> |
| Bundle Windows zip | JJKP (backup: TGG) | RC1: RC2: RC2-2: RC3: ✔ RC4: RC5: | Version string: R2015a-rc# <i>Next time: build manager should do this</i> |
| Run TestComplete smoke tests | TR | RC3: ✔ | These are tests on the packaged versions of GMAT: the installer and the zip bundle. |
| Run TestComplete system test missions | TR | RC3: ✔ | These are tests on the packaged versions of GMAT: the installer and the zip bundle. |
| Run script test system | JJKP (backup: TGG) | RC1: RC2: RC2-2: RC3: ✔ RC4: RC5: | Run the internal installer tests on T4 and the public installer tests on Joel's machine. Run .zip bundle tests afterwards on same build to compare. |
| Test all sample scripts | SPH | RC3: ✔ RC4: | At a minimum these need to be run individually by hand or run in GUI regression system. Additionally, they must be run on a system that has no other installations of GMAT. Past experience has shown that missing files, and configuraiton issues are not caught by running on machines used for development. |
| Run TestComplete full regression tests | TR | RC3: ✔ RC4: | (For final RC only) |

Notes

- While this cycle is ongoing is a good time to do wiki updates and cleanup.

Stage Release (Oct 30)

This is a soft release, putting all the files in place and updating information. Then on release day, we only need to send the announcements.

Use "(/)" for the checkmark (✓) and "(x)" for the cross (✗)

| Task | Who | Status | Notes |
|---|------|--------|---|
| Bundle source code | DJC* | ✓ | <ol style="list-style-type: none"> 1. Export the trunk code from svn that is used for the release build when that build is started 2. Wait for a go/nogo call from testing on the build 3. Archive the following folder trees into a zip file: src, plugins, build |
| Bundle data | DJC* | ✓ | <ol style="list-style-type: none"> 1. Use the same export as used for the source bundle 2. Wait for a go/nogo call from testing on the build 3. Archive the following folder tree into a zip file: application/data |
| Upload source bundle to SourceForge | SPH | ✓ | <ol style="list-style-type: none"> 1. Move the zip file to SF 2. Mark as "staged" 3. Download the upload and check it |
| Upload data bundle to SourceForge | SPH | ✓ | <ol style="list-style-type: none"> 1. Move the zip file to SF 2. Mark as "staged" 3. Download the upload and check it |
| Upload Windows installer to SourceForge | SPH | ✓ | Download, install, and run after uploading. |
| Upload Windows zip to SourceForge | SPH | ✓ | Download and run after uploading. |
| Post README.rst.txt on SourceForge | SPH | ✓ | Update for new release |
| Upload docs to documentation site | SPH | ✓ | <ol style="list-style-type: none"> 1. Upload using SSH to http://gmat.sourceforge.net/docs/ 2. Update HTML with new section 3. Move "latest" pointer to new folder <p>SEE NOTES IN SECTION BELOW</p> |
| Fixed "latest download" to point to new exe. | SPH | | See instructions here: http://stackoverflow.com/questions/6777327/how-to-manually-set-the-default-download-file-in-a-sourceforge-project |
| Post internal & public release files to MESA network | SPH | ✓ | |
| Branch and tag repositories | DJC | ✓ | At least tag the test system; consider branching also if the burden on the repo is low. (In SVN, tagging makes a branch, so tagging already creates a branch.) |
| Make SourceForge repository backup | SPH | | <p>Follow SourceForge's instructions.</p> <p>Perform the backup on the Linode server and download the resultant .zip file, since the local network blocks rsync.</p> |

* DJC can only do steps 1-3 here because of contractual constraints

Release Day (Nov. 2)

Use "(/)" for the checkmark (✓) and "(x)" for the cross (✗)

| Task | Who | Status | Notes |
|---|------|--------|--|
| Make files visible on SourceForge | JJKP | | 07/21: Made visible at time of posting, as "soft" release. |
| Send out release announcement | SPH | | <ul style="list-style-type: none"> • Mention GSFC in the announcement • Don't include large attachments. |
| Post release announcement on SourceForge | SPH* | | |

| | | | |
|--|------|--|--|
| Post release announcement on GMAT Blog | JJKP | | |
| Mark as released in JIRA | SPH | | |
| Migrate code to SourceForge repository | JJKP | | Do we migrate to git at the same time? |

This needs to be assigned to a different person; DJC cannot post to SF

Post-Release

Use "(/)" for the checkmark (✔).

| Task | Who | Status | Notes |
|-----------------------------|-------|--------|---|
| Party! | (All) | | Plan for week of June 19 |
| Conduct postmortem review | SPH | | This includes gathering feedback, holding the postmortem meeting, and documenting the results. |
| Submit GSFC Metrics Summary | WCS | | The link to submit the metrics is invalid.No action is required for this item. It was decided on 09/25/14's GMAT meeting to check tasks that do not require any action or are inactive. |
| Submit NTR for next release | SPH | | Per Hughes: The NTR cannot be written until all features are finalized and it is too early to do that. |

Notes for postmortem

Please add your notes to the [R2015a Lessons Learned](#) document.

Compatibility changes

See [Writing Release Notes](#)

Creating an RC

1. Create the build
 - a. Log into `gs580w-gmat-t4` as "`gsfc580gmatbuild`". The credentials are on the network drive, in the `Infrastructure` folder.
 - b. Start Task Scheduler.
 - c. [RC1 only] Disable the "GMAT Daily Build" task, so it doesn't run automatically during the RC cycle (this can make things overly confusing).
 - d. Manually run the "GMAT Daily Build" task.
2. Create the bundles
 - a. On your local system, navigate to `GmatDevelopment\build\install\windows-nsis`. Note that you do not need to pull files down from the Git repository; this process will pull files from the remote build and create the packages in your local directory. There's a `README.txt` file there that explains things.
 - b. Open a MinGW, MSYS2, or Cygwin shell in this directory.
 - c. Run `'make assemble VERSION="R2015a-rc#"'`, where `"#"` is the number of the RC you're creating. This will create two directories in the current directory: `gmat-internal` and `gmat-public`.
 - d. Run the following commands to add the User Guide cover. This requires [sejda-console](#).


```

sejda-console merge -f
../../../../doc/help/src/files/images/Cover-UserGuide-A4-Trimmed.pdf
gmat-internal/GMAT/docs/help/help-a4.pdf -o
gmat-internal/GMAT/docs/help/help-a4-new.pdf -s all:all:
mv gmat-internal/GMAT/docs/help/help-a4-new.pdf
gmat-internal/GMAT/docs/help/help-a4.pdf

```

```

sejda-console merge -f
../../../../doc/help/src/files/images/Cover-UserGuide-Letter-Trimme
d.pdf gmat-internal/GMAT/docs/help/help-letter.pdf -o
gmat-internal/GMAT/docs/help/help-letter-new.pdf -s all:all:
mv gmat-internal/GMAT/docs/help/help-letter-new.pdf
gmat-internal/GMAT/docs/help/help-letter.pdf

```

```

sejda-console merge -f
../../../../doc/help/src/files/images/Cover-UserGuide-A4-Trimmed.pdf
gmat-public/GMAT/docs/help/help-a4.pdf -o
gmat-public/GMAT/docs/help/help-a4-new.pdf -s all:all:
mv gmat-public/GMAT/docs/help/help-a4-new.pdf
gmat-public/GMAT/docs/help/help-a4.pdf

```

```

sejda-console merge -f
../../../../doc/help/src/files/images/Cover-UserGuide-Letter-Trimme
d.pdf gmat-public/GMAT/docs/help/help-letter.pdf -o
gmat-public/GMAT/docs/help/help-letter-new.pdf -s all:all:
mv gmat-public/GMAT/docs/help/help-letter-new.pdf
gmat-public/GMAT/docs/help/help-letter.pdf

```

- e. Run 'make VERSION="R2015a-rc#", where "#" is the number of the RC you're creating. This will create four packages in the current directory: A .zip and a .exe file for both the internal and public versions. Note: To create only an internal version, run 'make internal VERSION="R2015a-rc#'
 - f. Copy the four package files to the network: \\mesa-file\595\GMAT\Builds\windows\VS2013_build_32\R2015a
 - g. To clean everything up afterwards, run "make clean".
3. Run the script test system on the internal installer package. See [Running the script test system](#), below.

Note: To make the final release bundles, you can't just rename the files to take off the "-rc#" portion. You need to recreate the bundles using this command: `make VERSION="R2015a"`

Running the script test system

In the steps below, "#" is the RC number and "<config>" is "internal" or "public".

1. Log into gs580w-gmat-t4 as "gsfc580gmattest". The credentials are on the network drive, in the Infrastructure folder.
2. [RC1 only] Start Task Scheduler and disable the "Run Script Test" task. You'll need to run the RC tests manually.
3. Uninstall all previous versions of GMAT.
4. Install the version being tested.
 - a. Check "Enable MATLAB interface".
 - b. Leave "Associate file types" unchecked.
5. Update the test system repo (located at C:\Users\gsfc580gmattest\Documents\GmatTest)
6. In MATLAB (64-bit):
 - a. Run:

```
>> cd C:\Users\gsfc580gmattest\Documents\GmatTest\bin
```
 - b. Run (replace # with RC number and <config> with "internal" or "public"):

```
>> diary('..\log\R2015a-rc#-<config>.log')
```

- c. Run (this command copies application files such as SPICE kernels needed for regression tests into the new installation of GMAT):


```
>> preparegmat('C:\Path\To\GMAT')
```
 - d. In C:\Users\testuser\Documents\GmatTest\bin, copy the appropriate template (autorundef.R2015aInternal.template.m or autorundef.R2015aPublic.template.m) to a new name (such as autorundef.R2015aRc1Internal.m) and fill in the values:
 - i. RunDef.Build: "R2015a-rc#-<config>"
 - ii. RunDef.GmatExe: path to installed GMAT.exe
 - iii. RunDef.RegressionBuild: last build date if testing RC1 (look in GmatTest\output for latest folder, such as 2013-07-31), otherwise, "R2015a-rc#-<config>"
 - e. Run:


```
>> gmattest <name of rundef.m> (e.g. autorundef.R2015aRc1Internal.m)
```
 - f. Wait until run completes (usually 8+ hours)
 - g. Run:


```
>> diary('off')
```
7. In a Windows cmd window, post results to network using robocopy:
- ```
>robocopy "C:\Users\gsfc580gmat\Documents\GmatTest\output\R2015a-rc#-<config>"
"\mesa-file\595\GMAT\TestResults\win7\R2015a-rc#-<config>" /E /MT /LOG:%TEMP%\robocopy.txt
```

## Updating SourceForge HTML docs page

The Sourceforge page for logging in is here: <https://sourceforge.net/p/forge/documentation/SFTP/>

I (SPH) used Filezilla and this was pretty straightforward once successfully logging in:

Hostname is [frs.sourceforge.net](https://frs.sourceforge.net)

UserName: "YOURSOURCEFORGEUSERNAME,gmat"

Password is: YOURSOURCEFORGEPASSWORD

File Updating

1. Add a new folder for the release under the gmat\htdocs\docs folder
2. Update contents of the new release folder with files from new release
3. Update the gmat\htdocs\docs\index.html to include new folder and to point to the new latest folder.

Remote site: /home/project-web/gmat/htdocs/docs

- project-web
  - gmat
    - htdocs
      - blog
      - doc
      - docs
        - latest
        - nightly
        - R2011a
        - R2012a
        - R2013a
        - R2013b
        - R2014a
        - R2015a
    - persistent
    - svn-backup

| Filename            | Filesize | Filetype                        | Last modified          | Permissi... | Ow   |
|---------------------|----------|---------------------------------|------------------------|-------------|------|
| ..                  |          |                                 |                        |             |      |
| latest              |          | File folder                     | 10/12/2015 9:02:34 PM  | lrwxrwxr-x  | jjkq |
| nightly             |          | File folder                     | 4/2/2013 8:47:57 AM    | drwxr-xr-x  | jjkq |
| R2011a              |          | File folder                     | 5/18/2012 4:29:47 PM   | drwxr-xr-x  | jjkq |
| R2012a              |          | File folder                     | 5/18/2012 4:27:33 PM   | drwxr-xr-x  | jjkq |
| R2013a              |          | File folder                     | 8/16/2013 7:55:37 AM   | drwxr-xr-x  | jjkq |
| R2013b              |          | File folder                     | 8/16/2013 7:56:54 AM   | drwxr-xr-x  | jjkq |
| R2014a              |          | File folder                     | 10/12/2015 9:02:23 PM  | drwxrwx...  | jjkq |
| R2015a              |          | File folder                     | 10/30/2015 12:13:10 PM | drwxrwx...  | jjkq |
| index-20120522.html | 1,776    | Firefox HTML Document           | 12/13/2011 8:17:45 AM  | -rw-r--r--  | jjkq |
| index-20130416.html | 3,704    | Firefox HTML Document           | 4/10/2013 1:44:44 PM   | -rw-r--r--  | jjkq |
| index-20140721.html | 5,148    | Firefox HTML Document           | 4/16/2013 11:10:02 AM  | -rw-r--r--  | jjkq |
| index-20151030.html | 6,867    | Firefox HTML Document           | 10/30/2015 12:12:05 PM | -rw-r--r--  | jjkq |
| index.html          | 6,867    | Firefox HTML Document           | 10/30/2015 12:19:14 PM | -rw-r--r--  | ste  |
| style.css           | 313      | Cascading Style Sheet Docume... | 7/21/2014 10:55:08 AM  | -rw-r--r--  | iikr |