



Exceptional service in the national interest

A proposed model for OSS project management

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Motivation



DOE encourages publication of OSS

- Greater access to results of DOE-funded research
- Potential for collaboration, continuation of work by others

Our published OSS spans a wide range of purpose and maturity

- Browse a lab's github organization; what do you find?
- Supplemental material for papers, subject-specific applications, utility libraries, ...

Hypothesis: work planning would benefit from a model for OSS project management

Guiding principles

Not every OSS project needs (or should aspire) to be numpy

- Documentation, testing, long-term maintenance: these are expensive

Every OSS project with a DOE attribution should meet some minimum level of quality

- A poor project may reflect poorly on other projects
- Avoid just throwing more bytes on the web to check a milestone box



What quality (or other) criteria do you look for when considering an OSS package?

For myself:

- Documentation
- Testing
- Activity

Your ideas?

DuraMAT OSS Guidelines



	Level 1	Level 2	Level 3
Code maturity and novelty	Code is mostly data analysis/plots, or using other already published packages. The code is largely intended to demonstrate usage or clarify an analysis. Novelty is low, implementing published ideas.	Code is structured into functions which are intended to serve as a general toolset for other analyses. Code may contain new algorithms that may require a disclosure.	Code is rationally and thoughtfully organized into packages, modules, classes and functions. It may serve as a framework for downstream analyses. Code may contain new algorithms that may require a disclosure.
Intended Use and Lifetime	Typically, used to support and document published analyses for enhanced reproducibility – e.g., something akin to supporting information for a journal publication.	Typically, may serve as documentation for the innovations of an entire project, e.g., for multiple publications. However, the project may no longer be actively maintained after project end.	The project is intended to be used and maintained long-term by the project team and a community of users; project lives on even if/when initial developers exit the project

Proposed OSS Project Management Model



Purpose – Attributes – Requirements for all OSS

	Group 1	Group 2	Group 3
Purpose	Supplemental documentation for a paper, report, etc.	Task-specific application or resource	Task-specific application or resource
Post-release Sustainment	None beyond author corrections	Not planned after project conclusion	Planned to continue beyond the project
OSS attributes	Group 1	Group 2	Group 3
Documentation (inline and web reference)	Optional	Inline required, webpages optional	Inline and webpages required
Unit tests	Optional	Required	Required. Coverage > 90%
Examples	N/A	Required for primary use cases	Optional (but preferred)
Software publications (e.g. JOSS)	N/A	Optional. If no publication then obtain a DOI for the software	Required

Requirements for all OSS (of any purpose)

License

Copyright

Versioning



Discussion – OSS Groups



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Your input

Discussion – OSS Attributes



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License; Copyright; Versioning

Your ideas