



Main outcomes of the discussion on EUROfusion standard software

Revised guidelines for EUROfusion standard software are proposed (c.f. next slides).

The purpose of these guidelines is to monitor collective progress across all codes and help identify areas where progress is desirable.

Some of the items on the list should apply uniformly to all EUROfusion standard software while some items have different importance depending on the type of codes.

The evaluation should not be used to rank codes or decide whether they are important.

The list should be sent to the code owners to collect feedback regarding adaptations of the guidelines.

Some points might need a clearer definition regarding how “completion” is to be interpreted.

While a few points can be answered with yes/no (like version control), other points need a more fine-grained level for answering (0%, 20%, 50%, 70%, 100%); in some cases there can be examples for what could be seen as 20% etc.



Guidelines for EUROfusion standard software: priority 1 (maximum), 2 and 3 for development

DRAFT FOR DISCUSSION

1. SOFTWARE ENGINEERING

1.1 Version control implemented

1.2 Software engineering standards (incl. continuous integration with regression and/or units tests) established

1.3 Coding standards (facilitating code maintainability and portability) established

1.4 Can be run on EUROfusion HPC and cluster systems

1.5 Code was performance profiled and/or optimized

1.6 Code was parallelized

1.7 Code was ported to accelerated platforms



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2. CODE INTERFACES

2.1 User-friendly interface (e.g., GUI) for easy code handling

2.2 Post-processing and visualisation tools as a part of the code releases

2.3 Interface to IMAS Data Dictionary (does not mean integration to IMAS)

2.3.1 Uses standardized IDS input

2.3.2 Produces standardized IDS output

2.3.3 Can be used as part of IMAS workflows

3. VVUQ

3.1 Code verification reports/papers available

3.2 Inter-code benchmarking reports/papers available

3.3 Code validation reports/papers available

3.4 Uncertainty quantification reports/papers available



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DRAFT FOR DISCUSSION

4. CODE DISSEMINATION

- 4.1 Stable up-to-date release version of the source code available on EUROfusion gitlab
- 4.2 Trainings provided to code users within EUROfusion
- 4.3 Code has an appropriate license

5. CODE DOCUMENTATION

- 5.1. High-quality technical documentation (including a detailed description of the underlying model) available on EUROfusion gitlab
- 5.2. User manual available on EUROfusion gitlab

6. USER SUPPORT

- 6.1 Responsive support team (involving code developers) in place
- 6.2 Tools for managing support requests (mailing list, issue tracker etc.)