Onboarding of models

L. Rastaetter

1. Visualization of Sample Outputs
2. Model Compilation
3. Command Line Execution
4. Model Test Run
5. CCMC Request Web Interface

1: Visualization of Sample Outputs

File format description or reader routine in Fortran, C, IDL or other low-level language (include raw input/output code used in object methods)

- Meta data (if not provided in output file)
  - Grid dimensions,
  - Grid positions (for each variable on staggered grid)
  - Coordinate system (name of standard system; describe modifications from closest standard system)
- Visualizations images made from test run outputs

2: Model Compilation

- Required libraries, compiler and compiler flags
  - Library versions and download URLs
  - Makefile or Configure script with required options to build model
  - Environment variables needed to run model
  - Include instructions to make and run preprocessing executables or tools.

3: Command Line Execution

- Input text file templates:
  - Names of variables that can be modified,
  - Default values,
  - Range of values where model is known to work reliably,
  - List of optional variables for expert use with ranges.
- Additional inputs needed
  - Sample input files and tool to reformat data,
  - Source URLs and tools to apply updates,
  - Separate preprocessing steps with own inputs and outputs

4: Model Test Run

- Short test run:
  - Number of cores needed, expected execution time
  - Input file(s) should request major outputs
  - Provide restart capability if available
    - Secondary run to test restart
- Outputs to compare against.
  - Standard-out and standard-error outputs
  - Output files from test run for comparison.
- Postprocessing
  - Execution example

5: CCMC Request Web Interface

- Know what to offer to users
  - Input options
    - Parameters
    - Input data with date ranges
  - Parameters to request output files
  - Output variables
- Begin with basic model capabilities
  - Identify pre-processing steps
  - Identify input files that web interface needs to create.
- Additional model features can be added later