Next Generation of the NCEP Flexible HPC Functionally Equivalent Environment (FEE): A Bridge From Operations to Research

The Design of NCEP FEE Standards, Based on Integration Developmental and Operational Requirements

1. Computational FEE Standards: Based on the Requirements for Operations (builds, systems, builds convention, naming conventions, build structure, the OPS workflow etc.)
2. Developmental FEE Standards: Requirements for collaborative development: Coding standards, Tools and IDEs compatibility, use of the Frameworks, Versions control, CM and Collaborative development envn
3. Model Integration Standards: Based on NOAA Environmental Modeling System (NEMS) Framework Integration requirements, EMF with NUOPC layer
4. Targeted Standard Developmental Workflow: Collaborative developmental methodology with automation of coding standards analysis and validation
5. Equivalence Evaluation Standards: Based on OPS and DEV Requirements for verification and verification methodologies consistency, including unit and regression testing requirements
6. NOAA Standards for Collaborative Development (Virtual Lab), CM, VC and CI (presented materials have been already fully deployed, or prototyped, or planned and ongoing development as the solutions for EMC and NCO of NCEP)

1. Objective: To Link Moving FEE & Apps Revision via User Modules

2. Auto Code EMC Standards Compliance Analysis using "Understand 4.0" of Scitools APIs

3. NEMS Models Framework & Coupling Standards

4. Targeted Standard Developmental Workflow

5. The Butterfly Std. Tests of the Functional Equivalence

6. NOAA Standards for Collaborative Development, CM, VC and CI

Source Code Cyclomatic Complexity

Part API

The "Understand 4.0" of Scitools Inc. includes a full PERL/Python API which allows you to directly query the database

Ready to go scripts:
- Code Validation for the metrics like:
  - Cyclometric Complexity
  - Function Length
  - Naming depth etc.

Source Code Cmp Corp std violation true

Std Metrics Violations Report

The "Understand 4.0" of Scitools Inc. includes APIs that allow you to directly query the database

3. NEMS Models Framework & Coupling Standards