Earth System Grid Federation Governance

Purpose

The Earth System Grid Federation (ESGF; http://esgf.llnl.gov/) comprises a collection of independently funded projects that develop, deploy and maintain open source software infrastructure for the management, dissemination, and analysis of model output and observational data. ESGF's primary goal is to facilitate advancements in Earth System Science. Now that ESGF software infrastructure is being adopted operationally by the international climate research community in support of its coordinated modeling activities, there is a need to establish a more formal governance structure that ensures resource implications for users as well as sponsors are fully taken into account as the software evolves. For this purpose a Steering Committee (SC) and an Executive Committee (XC) will be formed. Together they will provide direction and oversight to guide development of ESGF technology that meets the needs of users and sponsors.

The major funders of ESGF will participate in governing it, and by doing so there is the expectation that acting in good faith, they will attempt to work cooperatively and support work consistent with ESGF's goals. Nevertheless, it is explicitly understood that sponsors maintain complete control over allocation of their resources. This means that it will be essential to maintain strong lines of communication among the sponsors as well as the ESGF developers so that competing priorities can be harmonized and misunderstandings eliminated.

Steering Committee (SC): Composed of major ESGF sponsors, the Steering Committee ensures that directions proposed by the Executive Committee are consistent with funding priorities and are responsive to any concerns expressed by the user community.

The Steering Committee provides a forum for ESGF funding agencies to communicate, interact and coordinate their support for ESGF and to help fashion a common vision for its evolution. The SC establishes procedures and agreements that may be required for development and use of ESGF software. It also communicates resource constraints to the Executive Committee and provides feedback to the XC as to how well it is meeting sponsor goals and satisfying user needs.

Responsibilities of the Steering Committee:
- Communicate sponsor objectives and constraints to the XC to ensure that they are reflected in ESGF goals and vision.
- With advice from the XC, establish procedures for new open source ESGF software releases.
- With advice from the XC, draw up "terms of use" agreements and/or "memoranda of understanding" with those relying on ESGF software infrastructure, specifying any expectations and requirements (including resource requirements) for participation.
- Advise on funding issues and opportunities that may be relevant to continued progress.
- Ensure SC membership includes representatives from all agencies and recognized consortia of research organizations providing significant ESGF contributions.
- Consider new directions proposed by the XC and provide feedback on which ones are consistent with ongoing or potential funding sources.
- Annually produce a report outlining individual funding levels and projects supported

The SC shall have a DOE program manager as chair. A co-chair will be elected at the first meeting. The initial representatives of the SC are also identified in Addendum 1.

Additional sponsor representatives will be admitted to the committee if they support ESGF at a level greater than a threshold (initially thought to be 5FTE /year that will be established by the SC Chair in consultation with the other members of the Board. Members may be removed or added by a simple majority vote by the rest of the membership. Decisions and recommendations will be made through a simple majority vote and relayed via email to members of the XC.

Executive Committee (XC): Composed of institutional leaders of ESGF, the Executive Committee provides general guidance and makes high-level decisions in directing and coordinating the course of ESGF consistent with multiple sponsor needs.

The Executive Committee accepts guidance from and reports to the Steering Committee. Taking into account funding constraints communicated by the SC and seeking input from ESGF users, the XC develops design requirements for ESGF software infrastructure and establishes procedures and agreements on its evolution and application.

Responsibilities of the Executive Committee:
- Maintain a roadmap for ESGF, including long-term plans.
- Set priorities for development and coordinate development of ESGF software.
- Approve or veto proposed major software architectural changes.
- Ensure that software documentation and support is maintained at an appropriate level.
- Support coordination between ESGF development and development of other essential software components of data service infrastructures.
- Seek input from users (both ESGF node hosts and service users) whenever major changes are considered that might affect them.
- Communicate resource needs to the SC.
- Provide updates on plans and progress when requested by the SC.
- Establish an Advisory Board (AB) that interacts and communicates community concerns and ideas to the XC for their consideration. This acts as a direct mode by which the community can act to guide further ESGF development.
- To facilitate interactions between the AB as well as external sponsors and resources, the XC will establish procedures whereby these groups can submit proposals.
- Communicate SC decisions to the developer community.

Executive Committee intervention is usually not needed for bug fixes or additions of new minor features if those features are consistent with the roadmap (see ESGF website: http://esgf.llnl.gov) and if before implementation they have been formally documented and posted to the relevant mailing list and/or tracking web site for comment. In contrast, changes with a significant impact on developers and/or users must be reviewed by the XC. XC approval is required if the answer to any of the following questions is yes:
- Does the change have resource or funding implications for the Steering Committee?
- Will the change significantly affect backwards compatibility?
- Will the change significantly affect users, node managers, or developers?
- Does the change significantly shift the functionality and scope of ESGF?
- Are there any licensing issues?
- Are there any security concerns that need to be addressed?

The initial members of the XC are named in Addendum 2. Additional members can be elected through a two-thirds majority endorsement by both the XC and the SC. Members are free to resign at any point. Members may be removed by a simple majority vote of the XC.

The XC shall elect a Chair, who will serve a three-year term. An exception is that the first chair (named in Addendum 2) will begin serving immediately upon adoption of this governance structure. A co-chair will be elected by simple majority vote at the first meeting of this group. Any XC member is eligible for election as a subsequent Chair (with no limits on the number of terms a member may serve in this capacity). It is the Chair's responsibility to schedule and conduct all meetings and to maintain the ESGF roadmap and a list of proposals requiring action.

Multiple members representing a single organization are together allowed only a single vote on all issues. For example, if two XC members represent the same NOAA-funded project, each of those member's votes would be counted as half a vote. Decisions will be taken with a simple majority.

Meetings

Meetings may occur via telecom, e-mail, or face-to-face. The XC will hold regular meetings, no less than every other month. The SC will meet no less than semiannually. The SC and XC will meet jointly no less than semiannually. At least one of the joint meetings should be a face-to-face meeting. Scheduled meetings and meeting notes shall be posted on the ESGF website.

The SC and the XC may invite guests to attend meetings and participate in other relevant ways, but guests do not have voting privileges. Participating guests may, for example, testify as to needed capabilities, provide expert technical advice, present proposals, or contribute to the code base.

Addendum 1: ESGF Steering Committee Membership:

Members:
    Sponsor representatives:
        Justin Hnilo (Chair, DOE)
        Sylvie Joussaume (IS-ENES)
        Tsengdar Lee (NASA)
        Ben Evans (NCI)
        Annarita Mariotti (NOAA)

    Ex-officio member:
        Executive Committee Chair, Dean N. Williams (DOE)

Addendum 2: ESGF Executive Committee Membership

Members:
    Dean N. Williams (Chair, DOE)
    Michael Lautenschlager (Co-Chair, DKRZ)
    Sebastien Denvil (IPSL)
    Luca Cinquini (NASA/NOAA)
    Robert Ferraro (NASA)
    Daniel Duffy (NASA)
    V. Balaji (NOAA)
    Ben Evans (NCI)
    Tom Landry (CRIM)