

This paper describes objective technical results and analysis. Any subjective views or opinions that might be expressed in the paper do not necessarily represent the views of the U.S. Department of Energy or the United States Government.



Exceptional service in the national interest

INTRODUCTION OF NEW STRATEGIC AND OPERATIONAL LEADERSHIP

Mike Heroux, Raisa Koshkin, Curt Ober,
Roger Pawlowski, Mauro Perego, Siva Rajamanickam,
Jim Willenbring, Michael Wolf

Trilinos Users Group 2023

10:30 am October 31st, 2023

MOTIVATION

- Demands of several issues had caused in focus on short-term tactical responses
 - Lack of Master Merge updates
 - Turnover of Framework team members
 - Removal of UVM from Trilinos and ASC Stakeholder applications
 - Many more ...
- Lack of focus on more strategic planning
 - What technologies on the 5-year horizon should we be investigating/researching?
 - What funding opportunities should we prepare for?
 - Who is championing at SC, vendors, labs, application teams, and other frameworks?
 - Who is informing developers on the latest technologies?
 - ...

NEW LEADERSHIP STRUCTURE

- **Strategic Leadership**

- Leads will primarily be defining and developing Trilinos strategic research directions to support future application needs over the next five years.

- Responsibilities

- Be aware of cutting-edge technology on the 5-year horizon
- Ensure robust funding for strategic priorities
- Be aware of strategic gaps in Trilinos
- Maintain list of strategic priorities (~5)
- Interface with external teams (e.g., PETSc)
- Be Trilinos champions at SC, vendors, labs, application teams, and other frameworks
- Prep/Train developers on latest technologies

- **Operational Leadership**

- Leads will maintain many of the current responsibilities of day-to-day operations, interaction with stakeholders, and planning over the next two years.

- Responsibilities

- Maintain DevOps Pipeline (CI/CD; hardware)
- Handle stakeholder requests
- Support Trilinos community
 - Website, wikis, TUG, "face/1st POC", tutorials
- Manage milestones
- ...



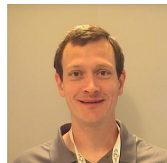
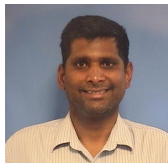
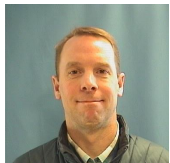
NEW LEADERSHIP STRUCTURE

- **Strategic Leadership**

- Should cover broad research areas
 - Algorithms Research
 - Big picture – vision for possible new areas
 - Software Sustainability
 - Long-term application needs

- Current Strategic Leaders

- Mike Heroux
- Eric Phipps
- Siva Rajamanickam
- Heidi Thornquist
- Jim Willenbring

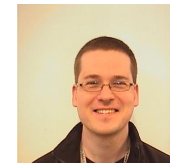


- **Operational Leadership**

- Should cover operational areas
 - Product Manager
 - Framework Lead
 - New Area Leads
 - Representation for every package
 - Need to balance packages/effort

- Current Operational Leaders

- Sam Browne – Framework lead
- Christian Glusa - Solvers
- Curt Ober – Product Manager
- Roger Pawlowski – Trilinos Core
- Mauro Perego – Discretizations and Analysis





ACTIVITIES SO FAR

• **Strategic Leadership**

- New AS&T LDRD (funded) - Recommended to submit a proposal that didn't get funding before
- Software Stewardship Efforts – 3 proposals
 - PESO (M. Heroux, J. Willenbring)
 - OASIS (S. Rajamanickam, M. Perego, ...)
 - S4PST (C. Trott, S. Rajamanickam, ...)
- Interactions/hackathons with vendors on upcoming platforms
- EuroTUG coordination
- SC23 meetings with vendors and other labs

• **Operational Leadership**

- Trilinos DevOps Pipeline Planning
- FY23 milestones and deliverables closed out
 - See Updates from Framework, Core, Solvers, and Discretization-and-Analysis
- FY24 requirements gathering, prioritization, and assignments complete
- Handle stakeholder requests
- TUG 2023

COMMITTEE/INITIATIVE TEAM

- **Strategic Leadership**
 - Can form a team

- **Operational Leadership**
 - Can form a team

Committee/Initiative Team

- A leader from Strategic or Operational Leadership
- Bring in Trilinos developers
- Focused/Temporary “single” task
- E.g., milestone support



CURRENT TRILINOS PRODUCT AREAS AND PACKAGES

Framework	Data Services	Discretizations	Linear Solvers	Nonlinear Solvers	Product Manager
<ul style="list-style-type: none">• PyTrilinos• Teuchos• TrilinosCouplings• TriUtils	<ul style="list-style-type: none">• Epetra• EpetraExt• Galeri• Isorropia• Kokkos• Kokkos Kernels• Pamgen• SEACAS• Tpetra• Xpetra• Zoltan/Zoltan2	<ul style="list-style-type: none">• Compadre• Domi• FEI• Intrepid/Intrepid 2• MiniTensor• Panzer• Percept• Phalanx• Shards• Krino• STK	<ul style="list-style-type: none">• Adelus• Amesos/Amesos2• Anasazi• AztecOO• Belos• Ifpack/Ifpack2• Komplex• ML• MueLu• Pliris• ShyLU/ShyLU-DD/ShyLU-Node• Stratimikos• Teko	<ul style="list-style-type: none">• Moertel• NOX• Pike• Piro• ROL• RTOp• Rythmos• Sacado• Stokhos• Tempus• Thyra	<ul style="list-style-type: none">• N/A

~~Package~~ – Slated for Archival in FY23-FY25
Package – Snapshotted package



PROPOSED TRILINOS AREAS AND PACKAGES

Framework	Core	Solvers	Discretizations and Analysis	Product Manager
<ul style="list-style-type: none">N/A	<ul style="list-style-type: none">GaleriKokkosKokkos KernelsPamgenSEACASTpetraZoltan/Zoltan2PyTrilinosTeuchosRTOpThyra	<ul style="list-style-type: none">AdelusAmesos2AnasaziBelosIfpack2MueLuPlirisShyLU/ShyLU-DD/ShyLU-NodeStratimikosTekoNOXXpetra	<ul style="list-style-type: none">CompadreIntrepid2MiniTensorPanzerPerceptPhalanxShardsKrinoSTKSacadoStokhosTempusTrilinosCouplingsPiroROL	<ul style="list-style-type: none">N/A



TIMELINE

- Planning occurred April-May 2023
- Announced at June 13th, 2023 at the SART and Trilinos Developers Meetings
- Meeting Schedule
 - Strategic Meetings
 - Every 4th week
 - Operational Meetings
 - Weekly the remaining three weeks
- Leaders can attend either meeting
 - To keep apprised and share input.