Welcome & Introducing the SU2 Foundation

Thomas D. Economon
4th Annual SU2 Developers Meeting
Villa Monastero, Varenna, Italy
May 9, 2019

SU2

Welcome to the 4th Annual SU2 Developers Meeting

Original Motivation

"Computational analysis tools have revolutionized the way we design engineering systems, but most established codes are proprietary, unavailable, or prohibitively expensive for many users. The SU2 team is changing this, making multiphysics

SU2 website circa Oct 2012

Key Milestones

SU2 Community Impact Over the Years

1000s of users, 100s of developers, dozens of institutions

generating

1000s of commits, 100s of pull requests, dozens of releases

attracting

1000s of repository visits, 100s of repository clones every two weeks

outputting

1000s of hours of training, 100s of research papers, dozens of theses

for educational and research

The SU2 source code alone is worth an estimated*:

18M USD

+ access to source code
+ network of top researchers
+ win-wins & network effects

SU2

*Based on Intermediate COCOMO model using 350k lines of code with nominal inputs in semi-detached mode.


How do we sustain and scale up?
Well-established Capabilities: FVM, adjoints, etc.
Shiny New Research
Critical Infrastructure: IO, MPI, Class Design
New Interfaces and Coupling for Multiphysics

SU2 FOUNDATION
1225 4th ST #333
SAN FRANCISCO, CA 94158

A Not-for-Profit, Nonstock
Delaware Corporation (USA)

Pursuing 501(c)(3)

SU2

Our Mission:

(a) promote global software development and education to increase the pace of innovation in the engineering sciences for the public benefit of all society;

(b) provide a neutral forum for community collaboration by offering efficient infrastructure and technical governance;

The team

Answer the question, "Why are we the ones to solve the problem we identified?"

Thomas D. Economon

Executive Director

Tim Albring

Developer Director

Ruben Sanchez

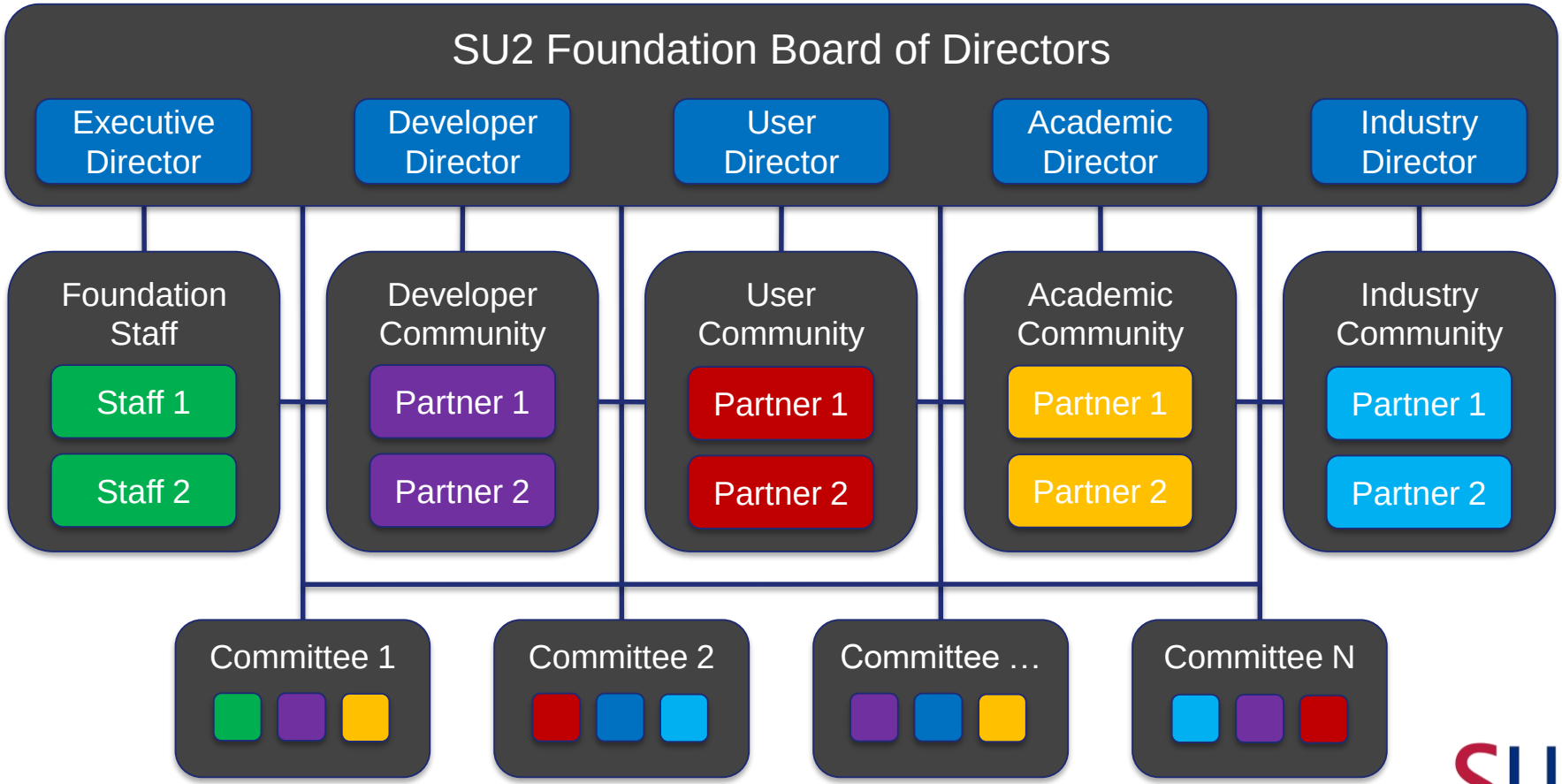
User Director

Juan J. Alonso

Academic Director

Eran Arad

Industry Directory



We have already started.

SU2

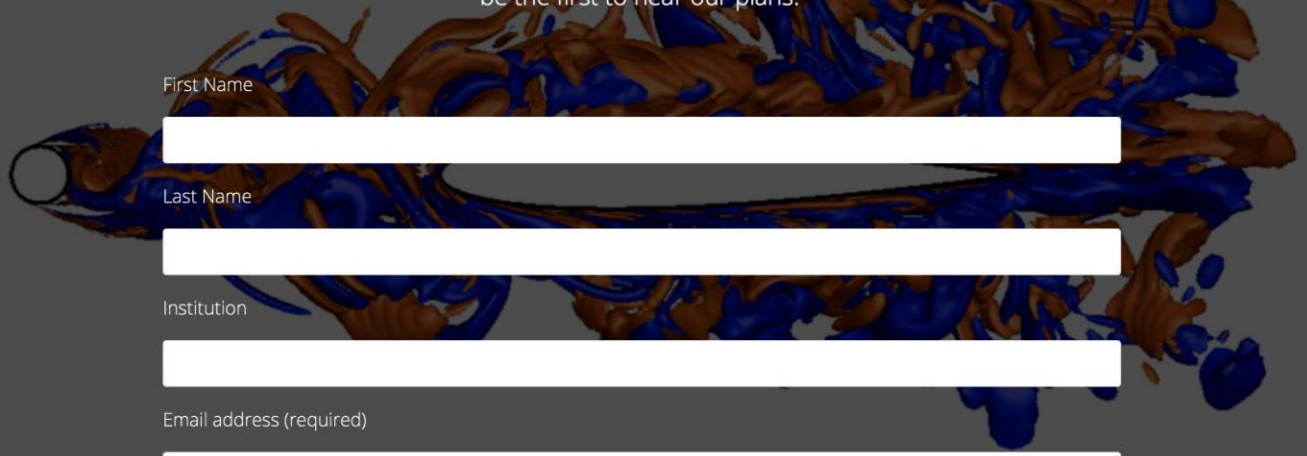
1225 4th St. #333, San Francisco, CA 94158 info@su2foundation.org

SU2 foundation

PROJECTS ACTIVITIES ABOUT US

Promoting open innovation in engineering software

At the intersection of education, research, and open software development, we're driving innovation in the engineering sciences for the benefit of all society from our headquarters in Silicon Valley. Sign up today to be the first to hear our plans.



First Name

Last Name

Institution

Email address (required)

I consider myself as part of the following communities

- [ ] User
- [ ] Developer
- [ ] Industry
- [ ] Academia

su2foundation.org
info@su2foundation.org

4th Annual Developers Meeting - Presentation Session Agenda

Time	Title	Authors
0800 - 0830	**Welcome & Introducing the SU2 Foundation**	Thomas D. Economon (Robert Bosch LLC/SU2 Foundation)
0830 - 0850	**Vision and perspective of SU2 development center at National Institute of Aerospace (NIA) (Invited Talk)**	Boris Diskin (National Institute of Aerospace)
0850 - 0910	**Turbomachinery Capabilities in SU2: Status of Current Developments and Future Perspectives**	Nitish Anand, Matteo Pini, Piero Colonna (TU Delft)
0910 - 0930	**Aerodynamics of hinged rotorcraft in SU2, with applications to ice accretion and noise**	Myles Morelli, Alberto Guardone (PoliMi)
0930 - 0950	**Recent Developments of Hybrid RANS/LES in SU2**	Eduardo S. Molina, Juan J. Alonso (Stanford), Beckett Y. Zhou, Nicolas R. Gauger (TU Kaiserslautern)
1000 - 1030	**Coffee Break**	-
1030 - 1050	**Multi-Physics Analysis and External Code Compatibility**	Heather Kline (National Institute of Aerospace)
1050 - 1110	**Shape and Topology Optimization of Fluid-Structure-Interaction Problems**	Pedro Gomes, Rafael Palacios (Imperial College London)
1110 - 1130	**Towards fully automated aerodynamics shape optimization of nonplanar wings with SU2**	Rauno Cavallaro (Universidad Carlos III Madrid)
1130 - 1150	**Boundary and Surface Shape Newton Schemes and Their Automatic Generation**	Stephan Schmidt (Universität Würzburg)
1200 - 1330	**Lunch**	-
1330 - 1350	**Pressure-robustness - a new criterion for the accuracy of incompressible Navier-Stokes solvers at high Reynolds number and beyond**	Alexander Linke (Weierstraß Institut Berlin)
1350 - 1410	**Implementation of a pressure based incompressible solver in SU2**	Akshay.K.R, Huseyin Ozdemir (TNO), Edwin van der Weide (University of Twente)
1410 - 1430	**Streamwise periodic flow simulations**	Tobias Kattmann (Robert Bosch GmbH/TU Kaiserslautern)
1440 - 1450	**Accuracy verification by means of exact and manufactured solutions**	Edwin van der Weide (University of Twente), Thomas D. Economon (Robert Bosch LLC)
1500 - 1530	**Coffee Break**	-
1530 - 1550	**SU2-NEMO: NonEquilibrium MOdels for Hypersonic Flows Using Mutation++**	Catarina Garbacz, Marco Fossati (University of Strathclyde), Walter T. Maier, Juan J. Alonso (Stanford University), James B. Scoggins (École Polytechnique), Thomas D. Economon (Robert Bosch LLC), Thierry Magin (Von Karman Institute)
1550 - 1610	**Shock capturing in SU2 DG-FEM solver**	Jae hwan Choi, Juan J. Alonso (Stanford University), Edwin van der Weide (University of Twente)