SU2 Foundation

Developer Perspective

Tim Albring

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Developer: Assessment of the SU2 Project Today

Sweet spots to keep/strengthen:

- Relatively simple code structure

- Easy installation and compilation

- Great collaboration between institutions and groups

- Use of established development processes and tools

Pain points to remove/improve upon:

- **No motivation or incentive to do non-glamorous and non-publishable work**

  - Maintenance needed!

- Lack of developer documentation

- Better and more careful code reviews

- No clear point of contact for specific (code related) questions

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Developer: Relationship with the Foundation

How the foundation can support developers:

- Provide (communication/legal) infrastructure
- Acknowledge well-written, documented and easy-to-use code
  - Code architecture and maintenance also deserves recognition
- Provide a channel of communication with Academia/Users/Industry
- Open new perspectives for a career in academia or industry

How developers can support the foundation:

- More involvement in code review and integration
- Creating and maintaining a "product"
- Following criteria for integration of features and contributing to improve such criteria
- Help defining a strategic direction
- Technical assessment on feasibility of features
- Creating documentation and training material

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Developer: Member Definition

The group of developers is defined as any individual that:

- Demonstrates development in SU2

- Potentially wants to extend/improve the code

- Interested in the **development of engineering software**

  - Interfacing SU2 with other tools e.g. CUPyDO, preCICE

  - Adding libraries, e.g. Tecplot IO

  - Improving code architecture

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From last year's IDS presentation...

INDUSTRY

- *"I want a reliable product"*
- *"I want to obtain a fast solution"*
- *"I want a product that is easy to integrate into my processes"*

"I want SU2 to fit my needs"

ACADEMIA

- *"I want a product with the latest methods"*
- *"I want to leverage on the community's expertise"*

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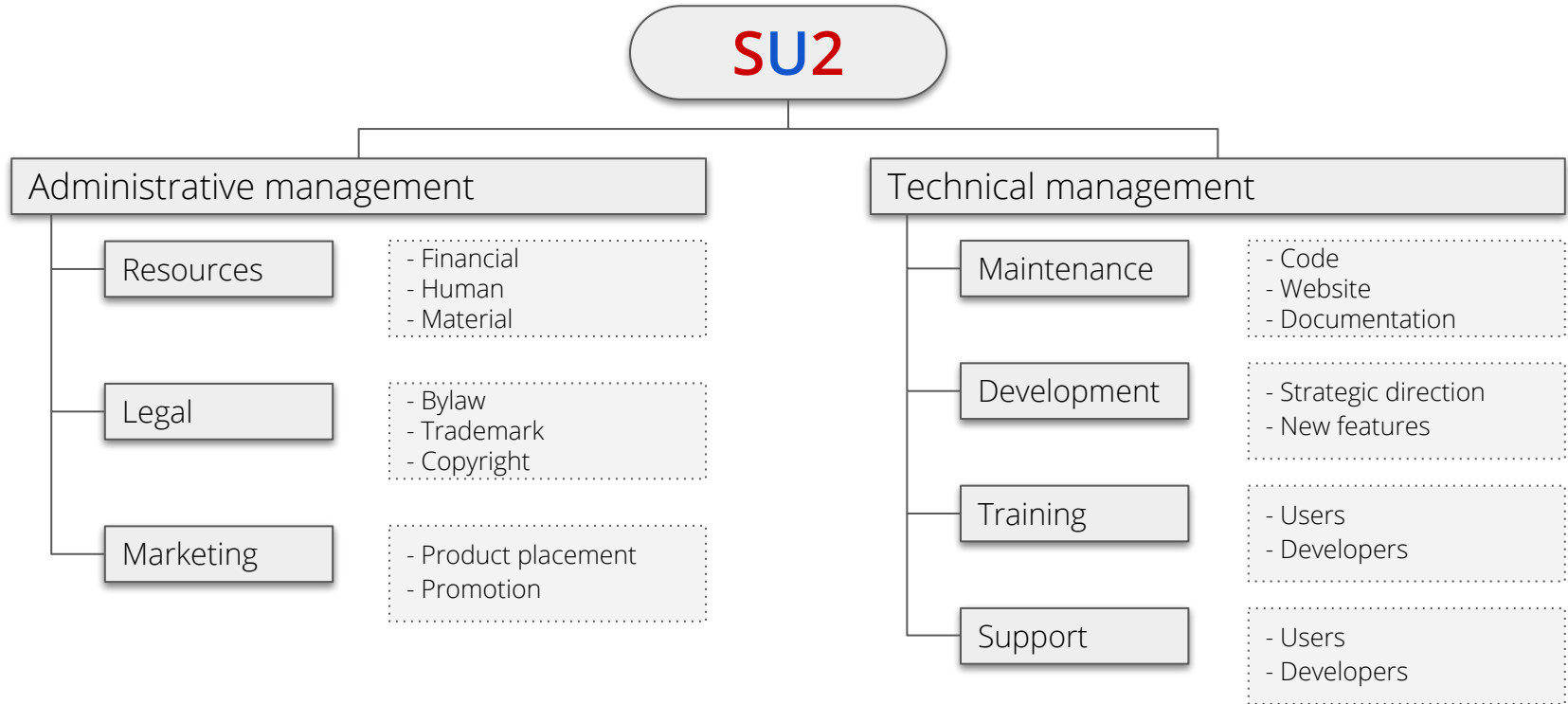Strategic direction
& new features

USERS

- *"I want a product that is easy to use"*
- *"I want a product that is well documented"*
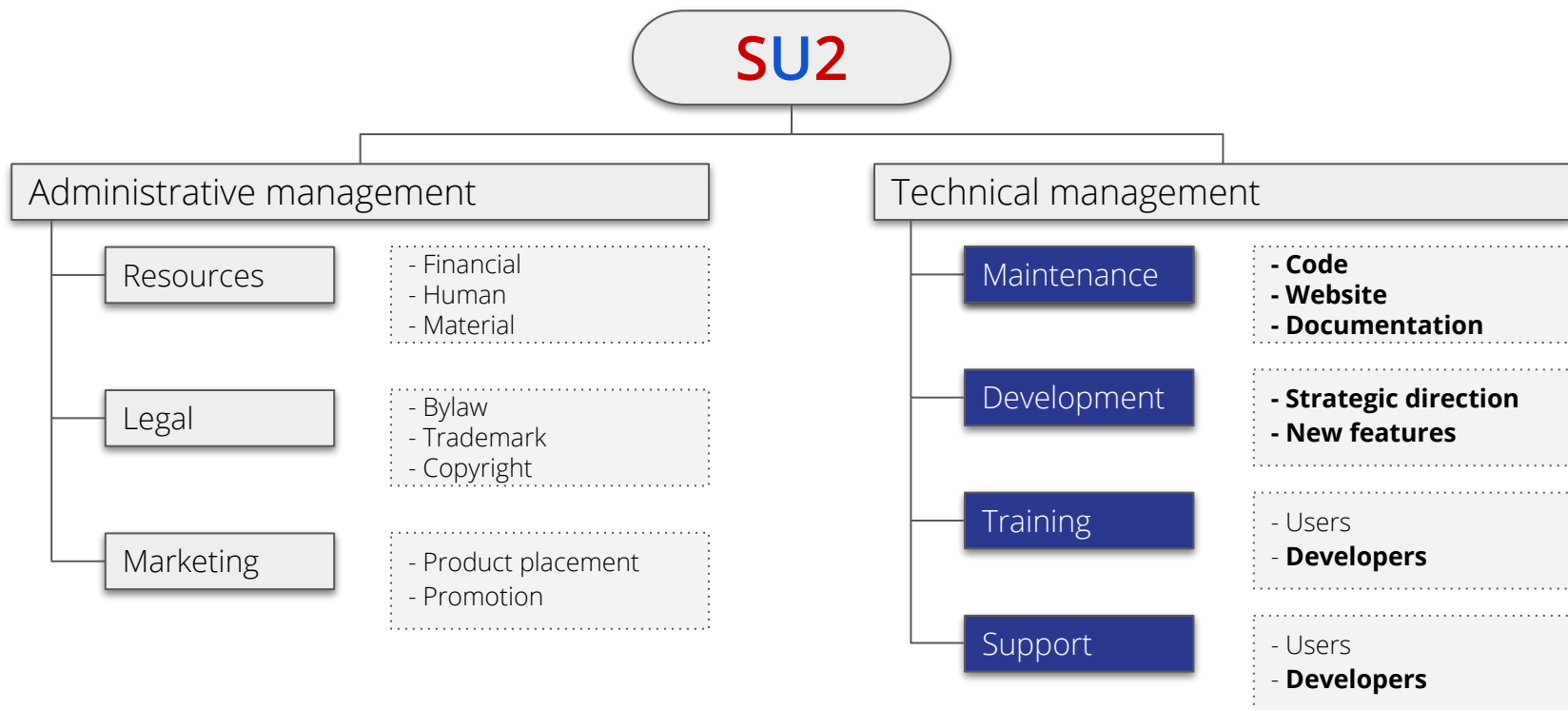
"I want SU2 to make my life easier"

DEVELOPERS

- *"I want a product that is easy to extend"*
- *"I want my contribution to be used by others"*
- *"I want to get support from other developers"*

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From last year's IDS presentation...

From last year's IDS presentation...

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Administrative management

Resources
- Financial
- Human
- Material

Legal
- Bylaw
- Trademark
- Copyright

Marketing
- Product placement
- Promotion

Technical management

Maintenance
- **Code**
- **Website**
- **Documentation**

Development
- **Strategic direction**
- **New features**

Training
- Users
- **Developers**

Support
- Users
- **Developers**

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Purpose of Developer Constituents

Connect

Organize and promote the exchange of ideas amongst developers

Inspire

Promote the growth of the code by supporting the developers and recognizing their contributions

Represent

Represent the interests of the developers within the SU2 foundation

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Defining the Group of Developers

Open community

- Anyone can get involved and/or lead by taking initiative and making contributions with high value.

- Many types of contributions are valuable for the overall success of the project (both code and non-code).

- **However...** as we all know, it is sometimes hard to get volunteers, and some work is less "glamorous".

Incentivize the community contributions

- **Member grade** mechanism is like a rewards system where folks earn *"contribution points"* to advance.

- Recommendation letter requirements at higher levels encourage more interaction and collaboration amongst community members.

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Membership Grades

Junior Developer

Open to anyone demonstrating SU2 **development.**

Developer

Requires **demonstrated contributions** and a minimum of 2 years of experience in SU2 development.

Minimum level to vote on elections.

Principal Developer

Experienced developer (>4 years) with a proven track record and a recommendation letter from a principal developer.

Minimum level to hold office.

Fellow

Senior developer (>8 years) with a proven track record and two recommendation letters from current fellows.

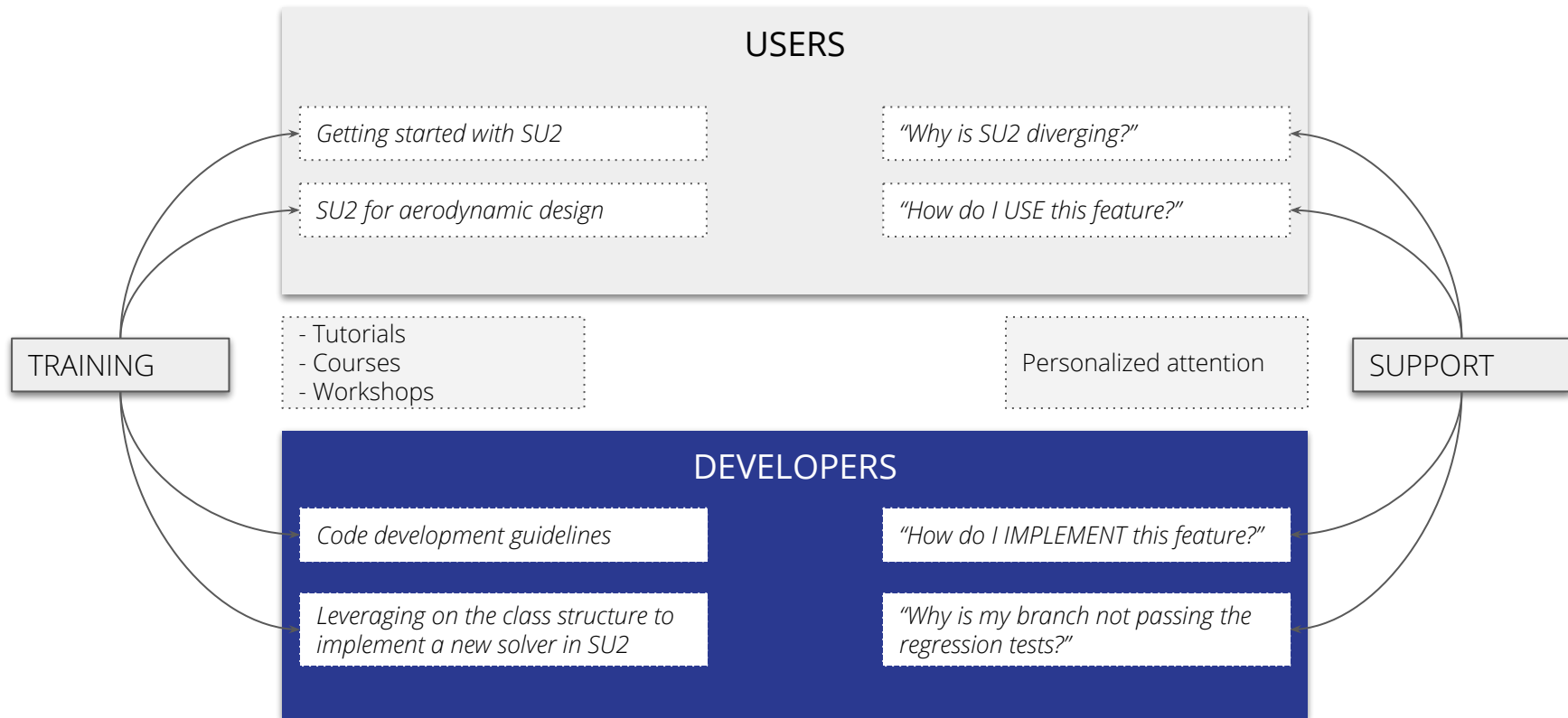Minimum level to be a repo maintainer.

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Connecting developers

Simplify the communication channels

- Create a single mailing list for the entire developer community.
- No more scattershot emails to subsets of community.
- Keep developers posted with planned releases, workshops, activities and ongoing features.
- Set up regular calls to coordinate technical details of code development.

Encourage technical discussions

- Have a forum / social network with searchable keywords and topics.

- More efficient than person-to-person contact suggestions, which is mostly how we connect people now.

- Encourage more collaboration and inspire new ideas.

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USERS

- Getting started with SU2
- SU2 for aerodynamic design
- "Why is SU2 diverging?"
- "How do I USE this feature?"

TRAINING

- Tutorials
- Courses
- Workshops

Personalized attention

SUPPORT

DEVELOPERS

- Code development guidelines
- Leveraging on the class structure to implement a new solver in SU2
- "How do I IMPLEMENT this feature?"
- "Why is my branch not passing the regression tests?"

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Developer: Proposal for Action

The following foundation programs/services/committees are recommended by the group of developers:

- Create technical committees, responsible for coordinating work on specific features (see Hackathon sessions on Friday)
- Regular technical meetings on ongoing/planned developments
- Define people responsible (experts) on areas in the code

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