

PAC³ SOB & deliverables review

PACE

The word "PACE" is rendered in a large, light blue, sans-serif font. The letter 'A' is stylized with a starburst shape above it and a long, thin, light blue line extending downwards and to the left from its base. Another starburst shape is positioned below the 'A'.

Jeremy Werdell
PACE Project Scientist

on behalf of countless others

PAC³, 20 February 2025



2021 United Nations Decade
2030 of Ocean Science
for Sustainable Development



part 1: algorithm implementation processes (SOT/SOB)

a Science Operations Board (SOB) consisting of representation from **NASA Program Management**, Project Science, the SDS, and the OB.DAAC oversees the selection process & consider resource requirements & science value

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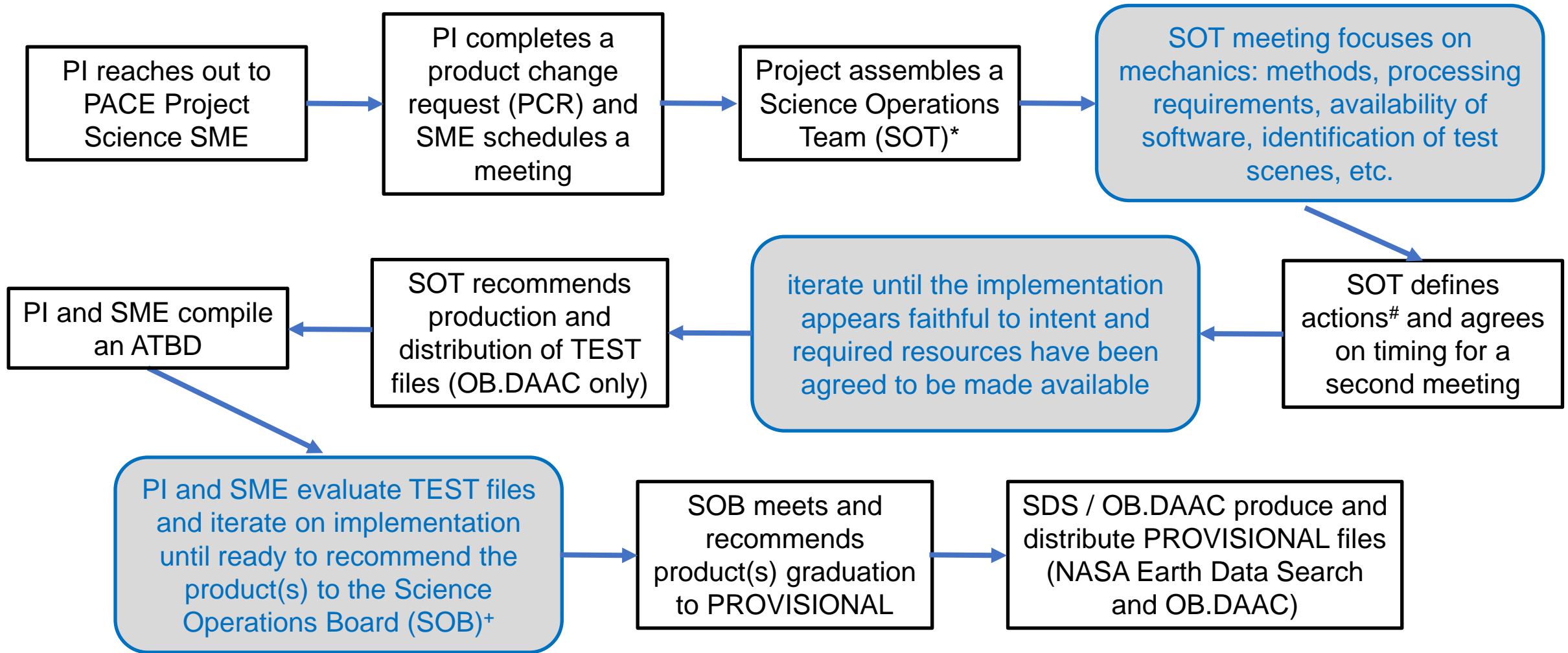
PACE Science Data Product Selection Plan

Jeremy Werdell, Bryan Franz, Paula Bontempi, Kevin Murphy, Antonio Mannino, Brian Cairns, Sean Bailey, Woody Turner, Jeremy Werdell, and Antonio Mannino

October 2020



https://pace.oceansciences.org/docs/TM-20205007069-2020-219027-Vol.-8-PACE_vol8.pdf



* the SOT typically consists of the PI, the SME, a programmer, and reps from Project Science, SDS, and the OB.DAAC

e.g., “please send us code”, “please identify test scenes”

+ the SOB typically consists of the SME, reps from Project and OB.DAAC, **HQ Program Management, and ESDIS**

Test products can (& often will) reach full mission production & distribution via the OB.DAAC

- when existing SDS/OB.DAAC resources (computation & storage) are sufficient to do so

Provisional status requires higher level approval as there are additional costs

- cloud transfer, storage, & distribution
- ESDS Program / ESDIS Project commit to supporting these costs & long-term maintenance of the products
- this is the “negotiation” conducted at the SOB review

easiest in practice to iterate (re-process) test products when issues are identified

- process is internal to the co-located SDS/OB.DAAC resources

A satellite image of a coastal region, likely the Amazon delta, showing a complex network of rivers and channels. The land is a mix of green and brown, indicating vegetation and bare earth. The water is a deep blue, with some lighter green areas near the coast. A white text box with a black border is overlaid on the image, containing the word "questions?".

questions?

part 2: expectations

from the A.38 solicitation: “It is expected that any Principal Investigators (PIs) or proposal teams selected for the PACE Science and Application Team will deliver an implementable approach or algorithm for a given data product, or the product itself, to the PACE Project **no later than the end of FY25**, and that this effort will be coordinated with the PACE Project Science Office and facilitated through the PACE Science Data Segment (SDS).”

→ → → “engage with the Project to begin implementation by the end of FY25 or to provide an updated data distribution plan and timeline”

for those who engage with the Project, see previous slides for the process

timing of SDS data product implementation & distribution is fluid & without deadlines

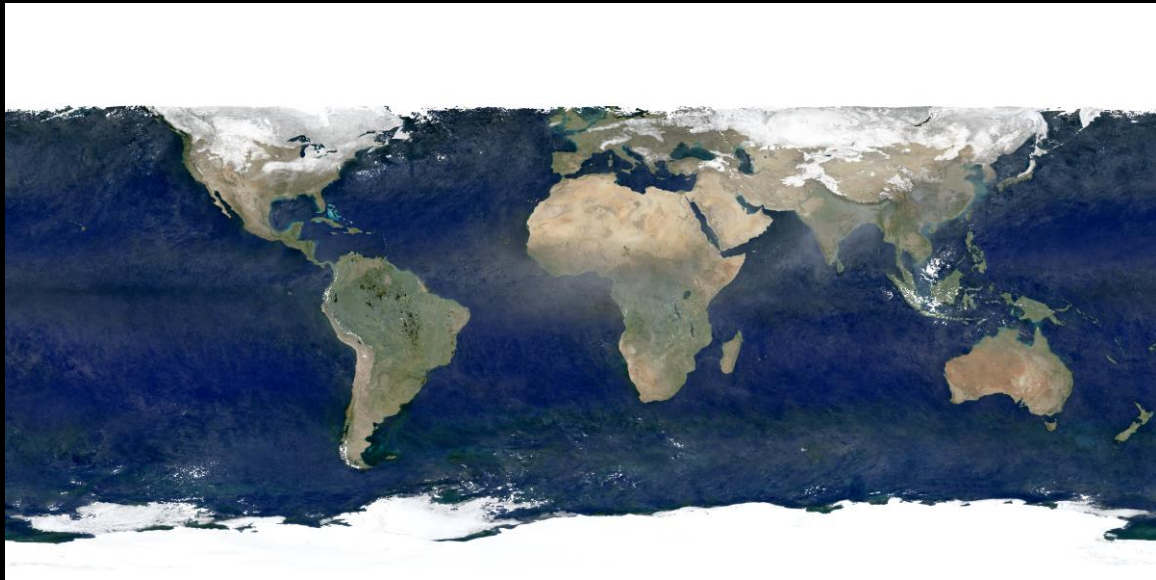
dependencies include:

- SDS resource availability: programmer staff availability, the SOT/SOB queue, other priorities, fire drills, etc.
- PI responsiveness & related needs for code or algorithm updates, e.g., ...
- algorithm computational & resource performance
- other aspects related to porting an approach into an operational (*latency*), agency (*rules*) environment
- production of an algorithm theoretical basis document (ATBD)

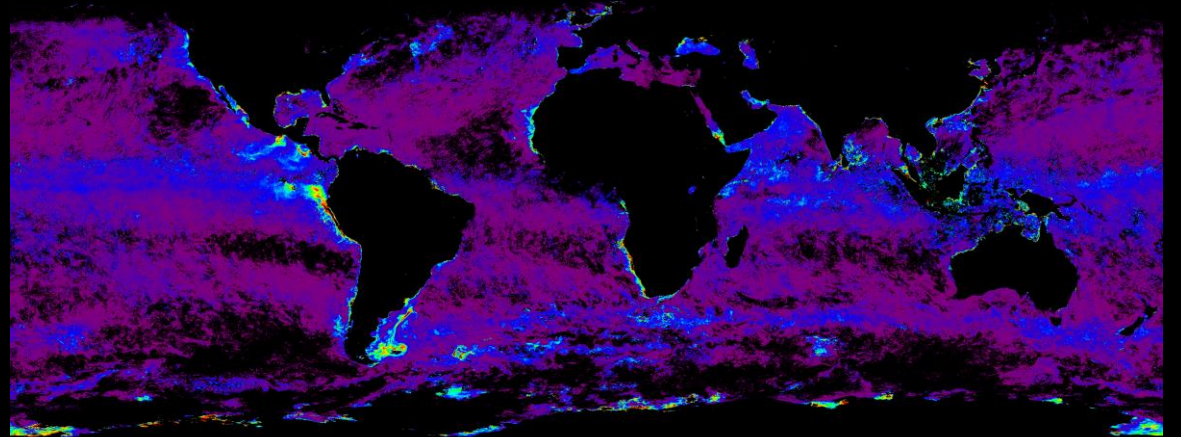
notes from breakout discussion on Wednesday → path forward, ideas and changes

- issues with libraries that are proprietary to the programming language (e.g., Matlab or IDL optimization)
 - public can see libraries that are available in L2gen (through SeaDAS/OCSSW)
 - OEL will make sure that is easy to find
 - engage early and work with your person at OEL side to figure out what could be issues in your code
- ocean code usually sit within L2gen universe, which traditionally leads to translation to C
 - new possibilities for SDS to accept python packages for stand-alone processing (ex: atmosphere products)
 - will be highly dependable on runtime efficiency and memory requirements
- OCSSW git (TBC) migration to the web/cloud, which will make implementation transparency higher
- suggestions were:
 - there are, or should be, instances of both GitHub and Gitlab that can be used to facilitate efficient integration of code into SDS with interaction of the PI
 - unit testing by both SDS and PI using specific examples should be available
 - allow for ticket tracking (following progress) for both PI and developers on NASA side.

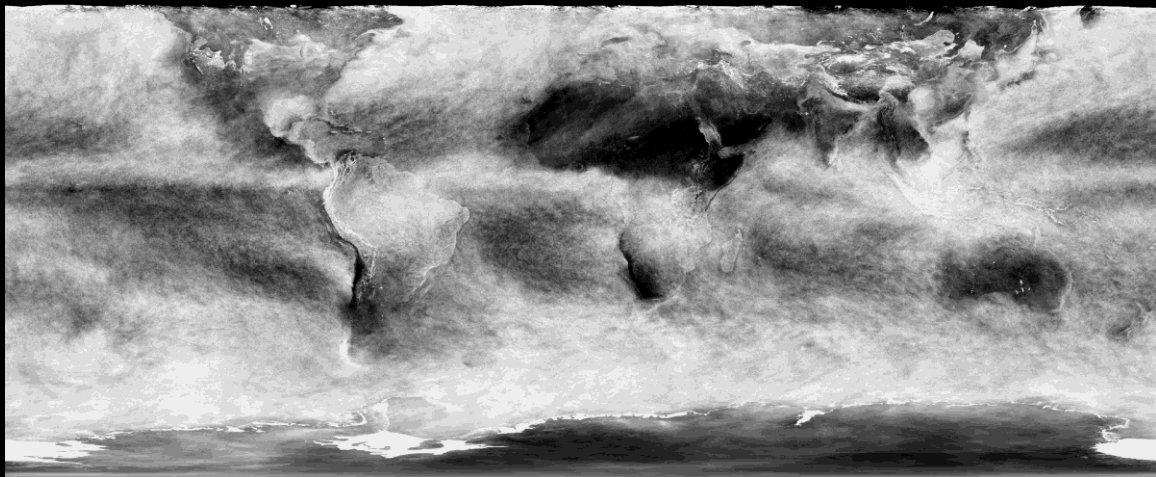
surface reflectance



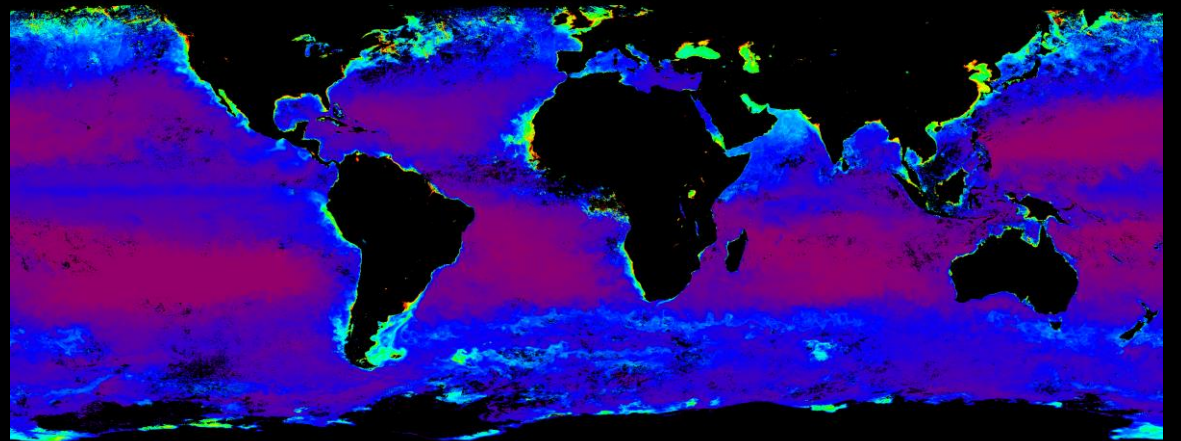
normalized fluorescence line height



cloud fraction



apparent visible wavelength





questions?