



SCIENCE ADVISORY BOARD

January 12, 2024

Dr. Richard W. Spinrad
Under Secretary of Commerce for Oceans and
Atmosphere & NOAA Administrator
Herbert C. Hoover Building, Room 6811
14th Street & Constitution Avenue, NW
Washington, DC 20230

Dear Dr. Spinrad:

Subject: Transmittal of Environmental Information Services Working Group (EISWG) Report on a NESDIS Observing System Backbone Framework

On behalf of the NOAA Science Advisory Board (SAB), I am pleased to transmit to you the SAB Environmental Information Services Working Group (EISWG) *Report on a NESDIS Observing System Backbone Framework*. The EISWG presented this report to the SAB, and the SAB approved it at its November 15-16, 2023 meeting. The report was developed by the SAB's Environmental Information Services Working Group (EISWG), in consultation with external subject matter experts and NOAA experts.

In this process, NOAA indicated to the study team that access to alternative-source data is desirable and that the concept of a backbone could contribute to successfully accomplishing that. The EISWG report describes a number of findings from the study process, suggests a series of guidelines and makes five recommendations to NOAA:

1. **NOAA should employ a backbone approach** to integrating alternative-source observations, with the nature of that backbone determined through a process involving a formal decision and implementation framework.
2. The backbone should be architected and **implemented through a process that is data- and use-centric**, not sensor- or platform-centric. It should treat backbone and alternative-source observations as a system to be optimized across performance, cost, and risk, recognizing the benefits and risks of each component.
3. Observing system elements employing a backbone approach should design and **implement the backbone as an enabler for the overall observational data element (ODE) system**.
4. As much as possible, NOAA **should define a strategy for continuously assessing and mitigating risks** to its alternative-source data availability and access as a part of its backbone approach.

5. The backbone approach is applicable to radio occultation (RO), with important backbone roles apparently as yet unfulfilled by alternative-source providers, and **NOAA should plan the RO element to include a backbone.**

While this report reflects the initial charter to address needs within NESDIS for spaceborne observations, the recommendations can be reasonably extended to address similar needs throughout NOAA.

Please note that a footnote was added to the report after approval at the November 2023 SAB meeting. This added reference emphasizes NOAA's long term plan to maintain a government observing backbone augmented with commercial data buys and data from partners.

The SAB encourages NOAA to utilize the SAB and its expertise to help move these plans forward where appropriate. Please let me know if you have any questions, comments, or concerns, or if the SAB can be of further assistance.

Very respectfully,



John R. Kreider
SAB Chair

Cc: Sarah Kapnick
Karen Hyun
Michael Weiss
Stephen Volz
Brad Colman
Scott Glenn
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Ilse Gayl
Tamara Battle
Carl Gouldman
Cindy Elsenheimer
Martin Yapur
Casey Stewart

Attachment: Environmental Information Services Working Group (EISWG) Report on a NESDIS Observing System Backbone Framework