

Summary of Public Comments: Draft NOAA Unmanned Systems Strategy

NOAA received comments from 24 persons or organizations (see Appendix A). The comments were parsed into 102 separate items and organized into four categories in an Adjudication Table in Excel to facilitate resolution. Each comment was recommended for either “No Action” or “Action,” i.e. possible revision or addition to current draft. Note # indicates item or row number in the Adjudication Table.

Table 1. Summary of Public Comments Received

<i>type of comment</i>	<i>totals</i>	<i>recommend NO ACTION</i>	<i>recommend ACTION</i>
Complementary Supportive, endorses or agrees with Strategy, does not require revisions.	43	41	2
Substantive Suggested addition(s) that clarifies key points, or correction/revision to factually incorrect material	42	20	22
Major Introduces new or expanded scope or content that may cause non-concurrence with current Strategy goals/objectives	17	14	3
Critical Contentious issue or topic that potentially conflicts with the purpose or objective of the Strategy	-	-	-
	<i>totals</i>	75	27

Almost all of the comments received were very supportive of the strategy though some also provided substantive and major suggestions for changes. And, while most of the comments recommended for “No Action” are statements of support, there are also a number excellent, thoughtful suggestions on UxS execution. In my judgement however, none of those designated for “No Action” should trigger revisions to the current UxS Strategy.

RECOMMENDED FOR “ACTION” - 27 Items organized into 17 topics

Introduction:

- 1. Improve or reinforce the “why,” i.e. why unmanned systems are important to NOAA.** (#18/NOAA-NCCOS-Dortch, and #97 and #100/NOAA-SAB)
- 2. Start with a better “purpose” statement that is about NOAA’s mission rather than UxS.** (#25/OMAO Standing Review Board)
- 3. Include the importance of UxS for biological measures such as harmful algal blooms.** (#14/NOAA-NMFS-Trainer, #16-17/NOAA-NCCOS-Dortch; #94/HAB Committee-Davis)

Definition of Unmanned

- 4. Add “sensors” to the definition of unmanned systems.** (#26/OMAO SRB)

Background

- 5. Acknowledge IOOS as a strong partner and as an example of collaboration.** (#66-67, #71/IOOS-Quintrell)
- 6. Indicate in Introduction or Background that the UxS Strategy will complement and support existing NOAA initiatives such as NOAA’s Ecological Forecasting Roadmap.** (#15/NOAA-NMFS-Trainer)

Goal 2

- 7. Obj. 2.2: Mention that requisite policies and procedures will be “enforced” to ensure safe and effective operations and accountability.** (#42/NOAA-OMAO-Blakeslee)

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8. **Obj. 2.3 “Institutionalizing Operational Applications Through Formal Concepts of Operations” to Obj. 3.3 “Test & Evaluation”**
(#56/USM-Delgado)

Goal 3

9. **Revise Obj. 3.1 to acknowledge how technology is always rapidly evolving.**
(#36/Leidos-Touchton)
10. **Obj. 3.3: Describe development of a regular demonstration exercise similar to US Navy ANTX to highlight NOAA mission areas and recent tech advancements to meet current/projected needs.**
(#34/USM-Graham, #45/NOAA-Blakeslee)

Goal 4

11. **Mention the value of extramural partnerships which through Cooperative Institutes and IOOS have played a vital role in augmenting NOAA’s observing capacity.**
(#59/COL-White)
12. **Cite a few examples of the kinds of partnering the is envisioned.** (#101/SAB-Scarlett)

Goal 5

13. **Obj. 5.1: expand the recruiting description to cross-partner detailing of personnel.**
(#21/USFWS-Lucas, #55/USM-Delgado)
14. **Expand Obj. 5.2 to include support for graduate programs and cooperative student training, and working with established training and certification programs.**
(#61/COL-White, #52/AUVSI-Smitsky)

General

15. **Add a Sairdrone vignette/illustration as an example of an industry owned/operated asset.**
(#98/NOAA SAB)
16. **Change “unmanned” to either “autonomous” or “unpiloted” throughout the report.**
(#92/Scripps-Gille)
17. **Integrate a broader and more robust interoperability as a guiding principle for all four strategies to ensure a unified approach.** (#63/COL-White)

HIGHLIGHTS OF RECOMMENDATIONS FOR “NO ACTION”

1. **Reorganize the report with a new outline and additional content (e.g. measures of performance).** (#77-82, OEAB)
2. **Align UxS goals/objectives to NOAA Enterprise Objectives.** (#73-74, OEAB)
3. **Add Exec. Summary explaining why UxS, Cloud, ‘Omics, and AI were selected.** (#75, OEAB)
4. **Add operational details about operations, acquisition, partnerships, etc.** (#84-85, Sairdrone, #38-41, NOAA-Blakeslee)
5. **Revise R2O narrative to clarify differences between investigating earth science and testing/evaluating technologies.** (#35, USM/Graham, #27, OMAO SRB))
6. **Evaluate/compare the UxS Strategy approach with NOAA’s ProTech contract.** (#2, Kendaya/unaffiliated)
7. **Include a table of UxS examples that also illustrates the UxS value proposition.** (#1, NOAA-Wanninkhof, #95 and #102/NOAA SAB)
8. **Increase Blue Economy rationale.** (#54, USM-Delgado)

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Appendix A: Sources of Public Comments (number of comments submitted)

1. AUVSI Mike Smitsky [7]	13. Northrop Grumman Rajan Vaidyanathan [2]
2. Consortium for Ocean Leadership Jonathan W. White [8]	14. Ocean Exploration Advisory Board John Kreider, Chair (via Dave McKinnie) [10]
3. IOOS Association Josie Quintrell [7]	15. Office of the Federal Coordinator for Meteorological Services Michael Bonadonna [9]
4. Kendaya, C. (no affiliation given) [1]	16. OMAO Standing Review Board via Bonnie Moorehouse, Moorehouse and Associates [2]
5. Leidos Bob Touchton [1]	17. Pure Storage Bill Duckett Account Executive [1]
6. Mystic Aquarium Stephen M. Coan [1]	18. Retired Engineer Kiran R Magiawala [2]
7. National HAB Committee & NOAA Ecol. Forecasting Roadmap WG Timothy Davis [1]	19. Saildrone Sebastien de Halleux [8]
8. NOAA Science Advisory Board [8]	20. SCRIPPS Sarah Gille [1]
9. NOAA/NCCOS Quay Dortch [3]	21. University of Southern Mississippi Dr. William (Monty) Graham [8]
10. NOAA/NMFS Vera Trainer [2]	22. University of Southern Mississippi and The Northern Gulf Institute Luke R. Thompson [1]
11. NOAA/OAR Rik Wanninkhof [1]	23. Univ. of Southern MS/School of Ocean Science and Engineering Rich Delgado [3]
12. NOAA/OMAO/PAD Dylan Blakeslee [10]	24. USFWS-HQ Jeff Lucas [4]