

maximize observational capabilities and their cost-effectiveness;

(3) identify current and potential future data gaps in observing capabilities related to the requirements listed under paragraph (1); and

(4) determine a range of options to address gaps identified under paragraph (3).

(Pub. L. 115–25, title I, §106, Apr. 18, 2017, 131 Stat. 95.)

**§ 8517. Observing System Simulation Experiments**

**(a) In general**

In support of the requirements of section 8516 of this title, the Assistant Administrator for Oceanic and Atmospheric Research shall undertake Observing System Simulation Experiments, or such other quantitative assessments as the Assistant Administrator considers appropriate, to quantitatively assess the relative value and benefits of observing capabilities and systems. Technical and scientific Observing System Simulation Experiment evaluations—

(1) may include assessments of the impact of observing capabilities on—

(A) global weather prediction;

(B) hurricane track and intensity forecasting;

(C) tornado warning lead times and accuracy;

(D) prediction of mid-latitude severe local storm outbreaks; and

(E) prediction of storms that have the potential to cause extreme precipitation and flooding lasting from 6 hours to 1 week; and

(2) shall be conducted in cooperation with other appropriate entities within the National Oceanic and Atmospheric Administration, other Federal agencies, the United States weather industry, and academic partners to ensure the technical and scientific merit of results from Observing System Simulation Experiments or other appropriate quantitative assessment methodologies.

**(b) Requirements**

Observing System Simulation Experiments shall quantitatively—

(1) determine the potential impact of proposed space-based, suborbital, and in situ observing systems on analyses and forecasts, including potential impacts on extreme weather events across all parts of the Nation;

(2) evaluate and compare observing system design options; and

(3) assess the relative capabilities and costs of various observing systems and combinations of observing systems in providing data necessary to protect life and property.

**(c) Implementation**

Observing System Simulation Experiments—

(1) shall be conducted prior to the acquisition of major Government-owned or Government-leased operational observing systems, including polar-orbiting and geostationary satellite systems, with a lifecycle cost of more than \$500,000,000; and

(2) shall be conducted prior to the purchase of any major new commercially provided data with a lifecycle cost of more than \$500,000,000.

**(d) Priority Observing System Simulation Experiments**

**(1) Global Navigation Satellite System Radio Occultation**

Not later than 30 days after April 18, 2017, the Assistant Administrator for Oceanic and Atmospheric Research shall complete an Observing System Simulation Experiment to assess the value of data from Global Navigation Satellite System Radio Occultation.

**(2) Geostationary hyperspectral sounder global constellation**

Not later than 120 days after April 18, 2017, the Assistant Administrator for Oceanic and Atmospheric Research shall complete an Observing System Simulation Experiment to assess the value of data from a geostationary hyperspectral sounder global constellation.

**(e) Results**

Upon completion of all Observing System Simulation Experiments, the Assistant Administrator shall make available to the public the results an assessment<sup>1</sup> of related private and public sector weather data sourcing options, including their availability, affordability, and cost-effectiveness. Such assessments shall be developed in accordance with section 50503 of title 51.

(Pub. L. 115–25, title I, §107, Apr. 18, 2017, 131 Stat. 96.)

**§ 8518. Annual report on computing resources prioritization**

Not later than 1 year after April 18, 2017, and not less frequently than once each year thereafter, the Under Secretary, acting through the Chief Information Officer of the National Oceanic and Atmospheric Administration and in coordination with the Assistant Administrator for Oceanic and Atmospheric Research and the Director of the National Weather Service, shall produce and make publicly available a report that explains how the Under Secretary intends—

(1) to continually support upgrades to pursue the fastest, most powerful, and cost-effective high performance computing technologies in support of its weather prediction mission;

(2) to ensure a balance between the research to operations requirements to develop the next generation of regional and global models as well as highly reliable operational models;

(3) to take advantage of advanced development concepts to, as appropriate, make next generation weather prediction models available in beta-test mode to operational forecasters, the United States weather industry, and partners in academic and Government research; and

(4) to use existing computing resources to improve advanced research and operational weather prediction.

(Pub. L. 115–25, title I, §108, Apr. 18, 2017, 131 Stat. 97.)

<sup>1</sup> So in original.