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<tr><td rowspan="2">NOTICE</td><td>U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION</td><td>N 1370.52</td></tr>
<tr><td>National Policy</td><td>Effective Date:
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SUBJ: Use of Generative AI Tools and Services

1. **Purpose of this Notice.** This Notice establishes the interim policy on the use of Generative Artificial Intelligence (GAI) in the Federal Aviation Administration (FAA).

2. **Audience.** This Notice applies to all employees and contractors within the FAA.

3. **Where can I Find This Notice?** This Notice is available on the Federal Aviation Administration (FAA) Orders and Notices webpage.

4. **What This Notice Cancels.** FAA Notice 1370.51. Use of Generative AI Tools and Services

5. **Background.**

   a. The term "artificial intelligence" or "AI" has the meaning set forth in 15 U.S.C. 9401(3): "a machine-based system that can, for a given set of human-defined objectives, make predictions, recommendations, or decisions influencing real or virtual environments." These systems use machine- and human-based inputs to perceive real and virtual environments; abstract such perceptions into models through analysis in an automated manner; and use model inference to formulate options for information or action. *See* appendix A of this Notice for additional AI-related definitions applicable to this Notice.

   b. The term "Generative AI" or "GAI" means the class of AI models that emulate the structure and characteristics of input data in order to generate derived synthetic content. This can include images, videos, audio, text, and other digital content. Model architectures, such as the Generative Pre-trained Transformer (GPT), have achieved recent widescale adoption and have triggered an explosion in the use of such technology.

   c. While GAI may provide benefits, it is important to ensure that its use is conducted in an ethical and responsible manner. FAA organizations, managers, employees, contractors, and others subject to the requirements of this Notice seeking to embrace GAI capabilities must follow current FAA policies regarding the use of information technology systems available through FAA government-furnished equipment, and the use and protection of FAA information and data, as well as all other applicable laws, regulations, and Executive Branch policies. Risks of GAI implementation can be identified and mitigated using the National Institute of Standards and Technology (NIST) Artificial Intelligence Risk Management Framework (AI RMF) found here.

   d. Additional guidance for the use of AI within the FAA is documented in the FAA AI Strategy.

   e. The FAA Enterprise Software Board (ESB) approves software for use within the enterprise and documents it on the Technology Product Roadmap. The only GAI-capable software approved for use within the FAA are those listed as approved on the Technology Product Roadmap. *Note:* While approval from the ESB is necessary before software can be deployed, often procurement is subject to additional review and approval (i.e., of the software vendor's terms and conditions).

   (1) To request use of GAI-capable software in the FAA, users must submit a software request via the MyIT Service Catalog.

   (2) FAA offices with defined artificial intelligence or GAI use-cases (i.e., a chatbot that can query documents) can request enablement assistance from the FAA Chief Data Office. The FAA tracks all AI use-cases. The FAA Chief Data Office supports access to AI tools and technologies (including GAI models approved for use within the FAA), provides expertise and implementation support in the use of AI, and also helps ensure agency compliance with all relevant guidance and reporting requirements. To request GAI enablement support, contact 9-AIT-ADO-AI@FAA.GOV for intake guidance.

   (3) FAA users may encounter GAI capabilities on internet sites accessible while on the FAA network. Before use, users should confirm that these GAI capabilities are approved for use within the FAA by contacting the FAA Chief Data Office.

6. Policy. This interim policy sets forth certain restrictions to the use of GAI until a more comprehensive FAA GAI governance policy is established. Revisions shall be conducted annually, unless new orders, policy, or technological advances warrant an earlier review schedule.

   a. Federal Government Responsibility: FAA organizations, managers and employees who use GAI are responsible for their actions and the content generated using GAI and must be in compliance with all relevant FAA policies including, but not limited to, Human Resources Policy Manual (HRPM) ER-4.1, Standards of Conduct.

   (1) FAA organizations, managers and employees must not use GAI to:

      (a) Perform or facilitate illegal or malicious activities;

      (b) Be cited as direct evidence or authority for a determination/decision;

      (c) Be used to contravene or circumvent any requirement, guidance, order, policy, notice, or standard operating procedure that otherwise applies;

      (d) Abuse, harm, interfere with, or disrupt FAA activities or services;

      (e) Knowingly generate content that is meant to harm or imitate individuals or groups; and

(f)   Infringe the intellectual property of a third party (e.g., by applying GAI to third-party copyrighted work(s) to create substantially similar new work(s)).

(2)   FAA employees who seek to utilize GAI must discuss their use of GAI in the performance of their duties with their immediate supervisor within their management chain ("first-line manager"). Only approved software may be used as described in 4.e.

(3)   Any misuse, intentional or unintentional, of GAI must be promptly reported to first-line managers. First-line managers should report the misuse of GAI to the Chief Data Office via email to 9-AIT-ADO-AI@FAA.GOV. *Note:* For purposes of this interim policy, the term "misuse" means any actions/activities that are inconsistent with this policy.

(4)   FAA organizations, managers and employees are responsible for reviewing all AGI-produced content for validity, accuracy and completeness before publishing.

b.   **Government Contractor Responsibility:** FAA contractors who use GAI are responsible for their actions and the content generated using GAI. Use of GAI by FAA contractors must not result in any action or output inconsistent with their federal contractual requirements.

(1)   Contractors must discuss with their FAA Contracting Officer (CO) and/or Contracting Officer Representative (COR) or the immediate supervisor within the management chain in their federal reporting office their use of GAI in the performance of their duties. Only approved software may be used as described in 4.e.

(2)   Contractors must adhere to the restrictions of use of GAI addressed in 5.a.1 above.

(3)   Contractors must report any misuse, intentional or unintentional, of GAI to their CO and/or COR who will report the misuse of GAI to the Chief Data Office via email to 9-AIT-ADO-AI@FAA.GOV. *Note:* For purposes of this interim policy, the term "misuse" means any actions/activities that are inconsistent with this policy.

c.   **Safeguarding Information:** In accordance with FAA Human Resources Policy Manual (HRPM), ER 4.1 - Standards of Conduct 4.1, section 8, employees must ensure the proper handling of Sensitive Unclassified Information (SUI) including "Other Types of SUI" (see FAA Order 1600.75 Protecting Sensitive Unclassified Information) and Classified National Security Information (CNSI) (see FAA Order 1600.2F Classified National Security Information). Moreover, Order 1370.121B - the FAA Information Security and Privacy Policy, and its supplemental implementing directives explicitly prohibit the sharing of FAA information and data with unauthorized users and systems. As a reminder, in accordance with established policy, FAA employees and contractors must never input the following categories of data into GAI tools that are outside the government secured cloud or data center environments:

(1)   Information that has not been approved for public release, including any form of Sensitive Unclassified Information (SUI) and non-public information, including any form of Classified National Security Information (CNSI) or SUI, regardless of whether it is government or sensitive non-government information. SUI includes all authorized categories and subcategories of Controlled Unclassified Information (CUI) in the CUI Registry, which is maintained by the National Archives and Records Administration's

(NARA's) Information Security Oversight Office (ISOO);

(2) Personally Identifiable Information (PII) of yourself or others which includes information that permits the identity of an individual to whom the information applies to be reasonably inferred by either direct or indirect means including information:

(a) That directly identifies an individual (e.g., name, address, social security number or other identifying number or code, telephone number, email address, etc.);

(b) By which an agency intends to identify specific individuals in conjunction with other data elements, i.e., indirect identification. (These data elements may include a combination of sex, race, birth date, geographic indicator, and other descriptors);

(c) Information that permits the physical or online contact of a specific individual;

(d) Medical information including record numbers, account numbers, health plan beneficiary numbers;

(e) Certificate, license, or passport numbers;

(f) Other personal identifiers;

(g) Biometric identifiers;

(h) Personal images or sensitive audio recordings;

(i) Passwords, Internet Protocol (IP) addresses, device identifiers, serial numbers, application programming interface keys; and/or

(j) Any other information that would allow an unauthorized actor to gain access to FAA systems, information, or data.

Note: Offices with defined GAI use-cases that require the use of the types of data described in section 5(c) of this Notice may request GAI enablement assistance from the FAA Chief Data Office.

   d. **Intellectual Property Rights:** The FAA is committed to respecting the intellectual property rights of others. With current technology, it is not feasible for end users of GAI to guarantee that their use of GAI and/or generated content created from their use of GAI does not infringe upon the copyright or other intellectual property rights of others. Therefore, GAI must only be applied to public domain works, FAA, or contractor original works of authorship, or works of authorship for which the FAA or contractor has ownership or appropriate license rights unless the appropriate intellectual property or other source document markings are retained in the GAI created content. Users of GAI in the FAA should avoid applying it to any person's Name, Image, and/or Likeness.

    e. **Cybersecurity:** The use of AI tools may introduce new attack routes for malicious cyber actors. If you have reason to believe that there has been a cybersecurity incident, you must contact the Security Operation Center at <u>soc@faa.gov</u> or 866-580-1852.

    f. **Accountability:** GAI use cases are tracked on the FAA's AI inventory via coordination with the Enterprise Information Management Steering Committee, per direction of the FAA Chief Data Officer.

- All GAI output, including all information, content, or data created by GAI within the FAA, must undergo human review for validity, accuracy and completeness.

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Appendix A. Artificial Intelligence Definitions

1. Artificial intelligence: The term "artificial intelligence" or "AI" has the meaning set forth in 15 U.S.C. 9401(3): a machine-based system that can, for a given set of human-defined objectives, make predictions, recommendations, or decisions influencing real or virtual environments. Artificial intelligence systems use machine- and human-based inputs to perceive real and virtual environments; abstract such perceptions into models through analysis in an automated manner; and use model inference to formulate options for information or action.

2. Deep learning: A subset of machine learning that utilizes successive or deep series of transformations and representations of data input to produce an output that solves a task. In contrast to machine learning, deep learning utilizes neural network components as the basis for long sequences of automated transformations of the input data requiring a lesser degree of feature engineering for the input data.

3. Generative AI: The term "generative AI" means the class of AI models that emulate the structure and characteristics of input data in order to generate derived synthetic content. This can include images, videos, audio, text, and other digital content.

4. Generative Pre-trained Transformers (GPT): Deep neural network models based on the Transformer architecture which are used to generate results in a target modality. These models are trained on large sets of data in various training paradigms to achieve general- purpose applicability to modalities such as computer vision, natural language processing, and time-series modeling.

5. Large Language Models (LLMs): Deep neural networks engineered to generate text output based on a text query. Primarily trained on large corpus of unstructured text data which enable the model to predict an output sequence of text based on the examples that the model was exposed to in the training data. LLMs are a category of GPTs, although other GPTs exist for computer vision and other applications.

6. Machine learning: The term "machine learning" means a set of techniques that can be used to train AI algorithms to improve performance at a task based on data.

7. Neural Networks: A type of AI model with nodes or artificial neurons that are each responsible for a simple computation. These nodes are networked together with connections of varying strengths, and learning is reflected in changes to those connections. An important characteristic of neural networks is the relationship between nodes.

8. Training (Learning): Optimization of a machine learning model to perform tasks done through exposure to many examples of training data which are grouped into families of training styles such as supervised, semi-supervised, unsupervised and reinforcement learning.

9. Training data: Collections of text, images, audio, or other forms of domain-specific data used to train a machine learning model to perform inference or make predictions when given new data.

Appendix B. Machine Learning Architecture Limitations

Datasets as well as the architecture choice of the machine learning technique are fundamental to the performance of deep learning models. It is important to keep in mind that the data used to train models used in applications can have limitations, such as the extent of knowledge they are exposed to, biases that can impact the output, and task-related deficiencies. These are just some examples of the limitations that may exist in machine learning models, not an exhaustive list.

Note: Vendors often provide model documentation and performance-benchmarking results that describe these characteristics applicable to their specific GAI model. Such model documentation can typically be located via an internet search.

1. **Datasets**

    - The datasets used to train the language models influence their performance. If the user of a GAI chat system is asking questions that the models were not exposed to during training – the model may approximate based on related content and may provide an incorrect, incomplete, or incoherent response.

2. **Biases**

    - Due to the nature of how GPT models build representations based on the relation of tokens (parts of text) to others – GPT models can have biases. Due to human biases in the data on which the model was trained, the relations between topics and sequences of text in its output can reflect those biases.

3. **Hallucinations**

    - Language models, commonly used in GAI, can produce incomplete, incorrect, or incoherent responses due to the model having limited exposure to data that represents the query topic.
    - Language models often provide no indication to the user when responses are inaccurate.
    - Language models are limited to the datasets and timespan the training data covers.

4. **Limited reasoning**

    - Question answering can be powerful due to the recall of the model to produce content related to the user's query. But GPT chat systems don't reason at the level of human thinking.

5. **Model Performance**

    - All GAI models perform differently. For example, some GAI models produce mathematical outputs at a more accurate rate than other GAI models, while some models are more accurate when producing results for coding assistance.