



## U.S. Department of Transportation

### Privacy Impact Assessment

**Federal Aviation Administration (FAA)  
Office of Aviation Safety (AVS)/  
Unmanned Aircraft Systems Integration Office (AUS)**

#### **B4UFLY Mobile Application**

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## Executive Summary

The Federal Aviation Administration (FAA) Office of Aviation Safety (AVS), Unmanned Aircraft Systems Integration Office (AUS) partnered with Kittyhawk to develop the B4UFLY mobile application (“hereafter referred to as “B4UFLY”). to provide recreational small Unmanned Aircraft System (sUAS) flyers (“hereafter referred to as “users”) a tool to determine whether it is safe and legal to fly within a specific geographic area. The FAA developed this Privacy Impact Assessment (PIA) to address the privacy concerns the public may have about the application and document the steps taken by the FAA to protect user privacy when downloading or using B4UFLY.

## What is a Privacy Impact Assessment?

*The Privacy Act of 1974 articulates concepts for how the federal government should treat individuals and their information and imposes duties upon federal agencies regarding the collection, use, dissemination, and maintenance of personally identifiable information (PII). The E-Government Act of 2002, Section 208, establishes the requirement for agencies to conduct privacy impact assessments (PIAs) for electronic information systems and collections. The assessment is a practical method for evaluating privacy in information systems and collections, and documented assurance that privacy issues have been identified and adequately addressed. The PIA is an analysis of how information is handled to—i) ensure handling conforms to applicable legal, regulatory, and policy requirements regarding privacy; ii) determine the risks and effects of collecting, maintaining and disseminating information in identifiable form in an electronic information system; and iii) examine and evaluate protections and alternative processes for handling information to mitigate potential privacy risks.<sup>1</sup>*

*Conducting a PIA ensures compliance with laws and regulations governing privacy and demonstrates the DOT’s commitment to protect the privacy of any personal information we collect, store, retrieve, use and share. It is a comprehensive analysis of how the DOT’s electronic information systems and collections handle personally identifiable information (PII). The goals accomplished in completing a PIA include:*

- *Making informed policy and system design or procurement decisions. These decisions must be based on an understanding of privacy risk, and of options available for mitigating that risk;*
- *Accountability for privacy issues;*
- *Analyzing both technical and legal compliance with applicable privacy law and regulations, as well as accepted privacy policy; and*
- *Providing documentation on the flow of personal information and information requirements within DOT systems.*

*Upon reviewing the PIA, you should have a broad understanding of the risks and potential effects associated with the Department activities, processes, and systems described and approaches taken to mitigate any potential privacy risks.*

## Introduction & System Overview

The FAA is responsible for ensuring the safety of the flying public, and people and property on the ground.<sup>2</sup> In response to the increasing number of reports of unsafe operations of sUAS near airports, over people, and near manned aircraft, the FAA partnered with Kittyhawk to provide B4UFLY. B4UFLY is a free mobile application available

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<sup>1</sup> Office of Management and Budget’s (OMB) definition of the PIA taken from guidance on implementing the privacy provisions of the E-Government Act of 2002 (see OMB memo of M-03-22 dated September 26, 2003).

<sup>2</sup> See <https://www.faa.gov/about/mission/>.

for download from the [Apple App Store](#) or [Google Play Store](#) for Apple iOS and Android mobile devices. B4UFLY supports the FAA's aviation safety mission by providing Users with situational awareness of where they should and should not fly. In addition, B4UFLY helps users know where there might be conflicts within restricted airspace before they fly. B4UFLY allows users to access flight restriction data in real time, wherever they are (or wherever they can receive a cellular signal). B4UFLY provides a user-friendly and intuitive experience option for Users to obtain flight restriction information to determine if it safe to fly in a specific geographic area.<sup>3</sup>

### *Partnering with Kittyhawk*

The FAA has partnered with Kittyhawk to develop and deploy B4UFLY, and has executed a Memorandum of Agreement (MOA). Under the MOA, Kittyhawk leverages publicly available flight restriction data (see Appendix A) and FAA provided subject matter expertise related to UAS regulations, operational guidance, and best practices to provide B4UFLY capabilities. Kittyhawk is responsible for developing and maintaining B4UFLY, consistent with the MOU, and owns B4UFLY for the duration of the MOA.

### **How B4UFLY Works**

Upon launching B4UFLY for the first time, Users are presented with a map of the United States and requested to enable their mobile device's geolocation.<sup>4</sup> The device's geolocation is automatically sent to Kittyhawk which executes a geospatial based query of the flight restriction data and additional information provided by FAA. Based on the query results, Kittyhawk pushes a map to the User's device with information about authorized flying status and restrictions specific to the User's location.<sup>5</sup>

Based upon the User's location, B4UFLY provides the following four flight status indicators:

- **Good to go** - No advisories, but stay alert! (Users may fly, but must be aware of surroundings.)
- **Caution** - Airspace restrictions may be in effect. (Users may fly, but should review and comply with flight restrictions listed.)
- **Do not fly** - Flights are prohibited. (Users are advised to not fly.)
- **Connection error** – (Users are advised not to fly until flight restriction data becomes available.)

Users are always responsible for flying safely, even when B4UFLY indicates that it is "Good to go."

### *Providing Feedback*

B4UFLY provides Users with the ability to submit feedback and/or questions. Users can submit policy related questions to FAA using the '[Contact FAA](#)' web-form. Users desiring a response must provide their email address. If

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<sup>3</sup> B4UFLY uses publicly-available flight restriction data sources to determine if it is safe to fly in a geographic area. See Appendix A for a listing of maps and sites.

<sup>4</sup> The User's mobile device uses a combination of the Global Positioning System (GPS), cell phone towers, and Wi-Fi networks to calculate their latitude and longitude (geolocation).

<sup>5</sup> Users who choose not to turn on their device's geolocation must then manually select an area by tapping on the map or entering specific address into the application. When specific location is selected or address entered, the longitude latitude for that location is transmitted to Kittyhawk. The location information is processed in the same manner as geolocation information that is sent automatically. Users may also use this feature to "plan" future flights, but are recommended to validate all information prior to actual flight.

the User does not want a response from the FAA, email address is not required, and no additional PII is collected. All 'Contact FAA' feedback and/or questions are routed by email to [uashelp@faa.gov](mailto:uashelp@faa.gov) and responses provided as requested. FAA does not forward the User's email addresses or policy related questions to Kittyhawk. Technical questions that are inadvertently sent to the FAA are forwarded to Kittyhawk for resolution.

Similarly, Users may submit technical questions to Kittyhawk using the '[Contact Kittyhawk](#)' web-form. These individuals must provide their email address and name if they desire a response from Kittyhawk. Otherwise, no PII is collected. Users also have the option to upload screenshots that identify errors they are receiving to help Kittyhawk better understand their technical issue. The 'Contact Kittyhawk' web-form includes a warning to Users to not upload any screenshots containing PII or to include unnecessary PII in their submission. Kittyhawk uses error information to identify technical issues, and to provide timely fixes and responses. Kittyhawk does not forward technical questions or accompanying information to the FAA. Policy related questions that are inadvertently sent to Kittyhawk are forwarded to the FAA for resolution.

## Fair Information Practice Principles (FIPPs) Analysis

*The DOT PIA template is based on the fair information practice principles (FIPPs). The FIPPs, rooted in the tenets of the Privacy Act, are mirrored in the laws of many U.S. states, as well as many foreign nations and international organizations. The FIPPs provides a framework that will support DOT efforts to appropriately identify and mitigate privacy risk. The FIPPs-based analysis conducted by DOT is predicated on the privacy control families articulated in the Federal Enterprise Architecture Security and Privacy Profile (FEA-SPP) v3<sup>6</sup>, sponsored by the National Institute of Standards and Technology (NIST), the Office of Management and Budget (OMB), and the Federal Chief Information Officers Council and the Privacy Controls articulated in Appendix J of the NIST Special Publication 800-53 Security and Privacy Controls for Federal Information Systems and Organizations<sup>7</sup>.*

## Transparency

*Sections 522a(e)(3) and (e)(4) of the Privacy Act and Section 208 of the E-Government Act require public notice of an organization's information practices and the privacy impact of government programs and activities. Accordingly, DOT is open and transparent about policies, procedures, and technologies that directly affect individuals and/or their personally identifiable information (PII). Additionally, the Department should not maintain any system of records the existence of which is not known to the public.*

The FAA has implemented measures to provide notice to Users of its privacy practices regarding B4UFLY. The [FAA's B4UFLY](#) and [Kittyhawk's B4UFLY](#) websites both provide Users a general overview of B4UFLY's capabilities. Users are presented with Kittyhawk's privacy policy when they access B4UFLY. Kittyhawk's B4UFLY Privacy Policy makes Users aware that the application accesses the User's mobile device's geolocation to populate maps, and the use and collection of the email address and name to respond to feedback and/or questions.

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<sup>6</sup> <http://www.cio.gov/documents/FEA-Security-Privacy-Profile-v3-09-30-2010.pdf>

<sup>7</sup> [http://csrc.nist.gov/publications/drafts/800-53-Appendix-J/IPDraft\\_800-53-privacy-appendix-J.pdf](http://csrc.nist.gov/publications/drafts/800-53-Appendix-J/IPDraft_800-53-privacy-appendix-J.pdf)

### *Downloading B4UFLY*

B4UFLY is a free mobile application that is available for download from the [Apple App Store](#) or [Google Play Store](#) for Apple iOS and Android mobile devices. Users may access these stores from links at the [FAA's B4UFLY website](#)<sup>8</sup> or by going to the stores directly from their mobile device. The FAA does not require Users to register or to provide any Personally Identifiable Information (PII) as a condition of downloading and using B4UFLY. Use of B4UFLY is voluntary; however, Users who download B4UFLY from the Apple App Store or Google Play Store may be required to provide personally identifiable information to Apple or Google prior to downloading B4UFLY. Neither the FAA nor Kittyhawk have access to the PII users provide to the Apple App Store or the Google Play Store. Apple and Google provide Kittyhawk an administrative console to review non-identifiable usage and performance indicators (e.g., how many downloads, heavy usage areas, what types of mobile devices to ensure B4UFLY capabilities are functional for the most widely used mobile devices.) Users who have downloaded B4UFLY in the past and who have automatic updates enabled on their mobile devices, will automatically receive the latest version of B4UFLY. If Users do not consent to automatic updates they must manually update to the latest version of B4UFLY on their mobile device from the Apple App Store or Google Play Store. Users may still use the previously downloaded B4UFLY, but it will not have the latest enhancements.

Users accessing the Apple App Store and Google Play Store from the [FAA's B4UFLY website](#) are presented with a pop-up warning notice that they are leaving a government website and will no longer be in the FAA environment. This warning notice advises Users that once they leave the FAA environment, the FAA cannot guarantee the accuracy or completeness of information presented, that they are subject to the privacy and security policies of the external site's sponsor, and that they are no longer protected by Federal Privacy Law.

The FAA has published Frequently Asked Questions (FAQ) on its website to help the public understand the B4UFLY application. The publication of this PIA further demonstrates the FAA's commitment to provide notice about B4UFLY. B4UFLY does not maintain records about individuals and is therefore not a Privacy Act system of records.

### **Individual Participation and Redress**

*DOT should provide a reasonable opportunity and capability for individuals to make informed decisions about the collection, use, and disclosure of their PII. As required by the Privacy Act, individuals should be active participants in the decision-making process regarding the collection and use of their PII and be provided reasonable access to their PII and the opportunity to have their PII corrected, amended, or deleted, as appropriate.*

B4UFLY does not collect PII and does not maintain records subject to the Privacy Act. Users must follow the protocols for the Apple App Store or Google Play Store for the correction, amendment, or deletion of information pertaining to themselves that was submitted to Apple or Google.

Neither the FAA nor Kittyhawk receive or the geolocation information provided by the user's device to the B4UFLY application for its operations. When a User consents to the use of their mobile device's geolocation capability, as explained above, the geolocation information is not captured by the application. Users who provide consent to the use of geolocation data by their device may revoke that consent at any time by turning off the geolocation function or by deleting the application. The geolocation information is never associated with a specific User and information related to the transaction between Kittyhawk and the User device is not saved by Kittyhawk. The application only

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<sup>8</sup> The [FAA's B4UFLY website](#) provides a general overview of B4UFLY and its capabilities. The FAA privacy policy on this site is applicable to the FAA's website operations and not the B4UFLY application.

transmits geolocation information when it is active and does not communicate with Kittyhawk when the application is idle or not in active use/backgrounded.

## Purpose Specification

*DOT should (i) identify the legal bases that authorize a particular PII collection, activity, or technology that impacts privacy; and (ii) specify the purpose(s) for which its collects, uses, maintains, or disseminates PII.*

Pursuant to 49 U.S.C. 44809, B4UFLY was developed to help users determine whether it is safe to fly within a specific geographic area. B4UFLY uses geolocation capabilities to calculate Users location and is used solely to generate a map with flight restriction information specific to the User's location. The application activities the device's location services and transmits geolocation to Kittyhawk only when B\$UFLY is being used.

The FAA requires Users' email addresses to respond to their policy related feedback and/or questions. Kittyhawk also requires Users' email addresses and names in order to respond to their technical related feedback and/or questions. Kittyhawk receives screenshots from users who submit them in order to illustrate technical issues. Kittyhawk uses this information to provide timely fixes. Apple and Google provide Kittyhawk an administrative console to review non-identifiable usage and performance indicators (e.g., how many downloads, heavy usage areas, what types of mobile devices (e.g., first generation iPhones, iPhone XR, Galaxy Note 4, Samsung S8, Samsung S4, etc.) to ensure B4UFLY capabilities are functional for the most widely-used mobile devices.

## Data Minimization & Retention

*DOT should collect, use, and retain only PII that is relevant and necessary for the specified purpose for which it was originally collected. DOT should retain PII for only as long as necessary to fulfill the specified purpose(s) and in accordance with a National Archives and Records Administration (NARA)-approved record disposition schedule.*

Users are required to provide their PII to the Apple App Store or Google Play Store to register and download B4UFLY. The FAA does not determine what PII Apple or Google require to register in their stores and neither share user PII with the FAA or Kittyhawk. Usage and performance indicators, which do not contain PII, may only be accessed through the administrative consoles provided to Kittyhawk and FAA by Apple App Store and Google Play Store. This data is not downloaded by Kittyhawk or FAA.

The FAA collects the minimum amount of information necessary to respond to Users' feedback and/or questions. Users' policy related feedback and/or question records are retained and disposed of by the FAA in accordance with National Archives and Records Administration (NARA), General Records Schedule (GRS) 6.5, [Public Service Customer Records](#), Item 10, Public Customer Service Operations records. These records destroyed one year after the customer inquiry is resolved, or when no longer needed for business use, whichever is appropriate. Kittyhawk maintains User's technical related feedback and/or question records until no longer needed for business use.

## Use Limitation

*DOT shall limit the scope of its PII use to ensure that the Department does not use PII in any manner that is not specified in notices, incompatible with the specified purposes for which the information was collected, or for any purpose not otherwise permitted by law.*

Use of B4UFLY is voluntary. Users understand that they may be required to provide PII to the Apple App Store or Google Play Store in order to download B4UFLY. Neither Apple nor Google shares the PII collected by them with the FAA or Kittyhawk.

The use of geolocation is transaction based request and is not saved by Kittyhawk after a response is provided to the User.

Users who choose to 'Contact FAA' may decide to provide their email address to receive a response from the FAA. Provision of the email address is optional and is only used when the User requires a response from the FAA. The FAA does not share Users' information received from 'Contact FAA'.

The 'Contact Kittyhawk' collection of email address and name is optional and is only used when the User requires a response from Kittyhawk. Kittyhawk's collection of Users' uploaded screenshots is optional and is only used to identify technical issues, and to provide timely fixes.

## Data Quality and Integrity

*In accordance with Section 552a(e)(2) of the Privacy Act of 1974, DOT should ensure that any PII collected and maintained by the organization is accurate, relevant, timely, and complete for the purpose for which it is to be used, as specified in the Department's public notice(s).*

Users that navigate to the Apple App Store or Google Play Store from the FAA website to download B4UFLY are advised that FAA cannot guarantee the accuracy or completeness of information presented on those external sites. If a User finds an error in their information they provided to the Apple App Store or Google Play Store, they will have to follow the Apple App Store or Google Play Store protocols to update their information. Neither Apple nor Google provide any Users' information to the FAA.

Users voluntarily provide their email address to the FAA, or their email address and name to Kittyhawk, when they desire a response to their feedback and/or questions. The FAA and Kittyhawk both depend on Users to provide their correct information. Additionally, Kittyhawk has the capability to validate that an email address is in the correct email format.

## Security

*DOT shall implement administrative, technical, and physical measures protect PII collected or maintained by the Department against loss, unauthorized access, or disclosure, as required by the Privacy Act, and to ensure that organizational planning and responses to privacy incidents comply with OMB policies and guidance.*

Kittyhawk owns B4UFLY and distributes it to the Apple App Store and Google Play Store for download. Both Apple and Google perform security analyses, independent of the FAA, to ensure mobile applications within their stores do not contain malicious software that will harm Users' mobile devices. The Apple App Store requires all mobile

applications go through a review process prior to release to the public.<sup>9</sup> The Apple App Store uses their iCloud security framework<sup>10</sup> guidelines to guard against security threats prior to loading the application to the Apple App Store. Google uses their Google Play Protect tool<sup>11</sup> to scan, detect, and remove malware or security threats prior to downloading onto Android devices. Google removes applications from the Google Play Store that contain malware or security threats.

## Accountability and Auditing

*DOT shall implement effective governance controls, monitoring controls, risk management, and assessment controls to demonstrate that the Department is complying with all applicable privacy protection requirements and minimizing the privacy risk to individuals.*

The FAA's Office of Information & Technology, Information Security & Privacy Service, Security Governance Division is responsible for the administration of FAA Order 1370.121, FAA Information Security and Privacy Program and Policy. FAA Order 1370.121 establishes FAA privacy policies, based on the Privacy Act of 1974 (the Privacy Act), the E-Government Act of 2002 (Public Law 107-347,) the FISMA, DOT privacy regulations, Office of Management and Budget (OMB) mandates, and other applicable DOT and FAA information and information technology management procedures and guidance. In addition to these, additional procedures will be consistently applied, especially as they relate to the access, protection, retention, and destruction of PII. Federal and contract employees are given clear guidance in their duties as they relate to collecting, using, processing, and security privacy data. Guidance is provided in the form of mandatory annual security and privacy awareness training, as well as FAA Privacy Rules of Behavior. The DOT and FAA Privacy Offices will conduct periodic privacy compliance reviews of B4UFLY consistent with the requirements of OMB Circular A-130, Managing Information as a Strategic Resource.

## Responsible Official

Erik Amend  
System Owner  
Office of Aviation Safety (AVS)  
Unmanned Aircraft Systems Integration Office (AUS)

## Approval and Signature

Claire W. Barrett  
Chief Privacy & Information Asset Officer  
Office of the Chief Information Officer

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<sup>9</sup> See <https://developer.apple.com/app-store/review/>.

<sup>10</sup> See <https://developer.apple.com/documentation/security>.

<sup>11</sup> See <https://www.android.com/play-protect/>.



## Appendix A - Flight Restriction Data Sources

The FAA UAS Data Delivery Service<sup>12</sup> is a FAA-enabled web service that makes data available in CSV, JSON, KML, Shapefile formats to meet the needs of developers and other stakeholders. The description and terms of use for each data set available on the site can be found on the individual page specific to that data. The FAA is dedicated to providing the public with data to spur innovation, provide better opportunities for the development of new applications and services, and ultimately, advance the safety and efficiency of the aviation industry.

Kittyhawk leverages information available via the UAS Data Delivery Service to power the B4UFLY application. B4UFLY uses the following data sets and maps:

- **Class Airspace:**  
[https://adds-faa.opendata.arcgis.com/datasets/c6a62360338e408cb1512366ad61559e\\_0](https://adds-faa.opendata.arcgis.com/datasets/c6a62360338e408cb1512366ad61559e_0)
- **Airports**  
[https://adds-faa.opendata.arcgis.com/datasets/e747ab91a11045e8b3f8a3efd093d3b5\\_0](https://adds-faa.opendata.arcgis.com/datasets/e747ab91a11045e8b3f8a3efd093d3b5_0)
- **National Security UAS Flight Restrictions**  
[https://udds-faa.opendata.arcgis.com/datasets/0270b9d8a5d34217856cc03aaf833309\\_0](https://udds-faa.opendata.arcgis.com/datasets/0270b9d8a5d34217856cc03aaf833309_0)
- **Airspace Boundary**  
[http://adds-faa.opendata.arcgis.com/datasets/67885972e4e940b2aa6d74024901c561\\_0?page=3](http://adds-faa.opendata.arcgis.com/datasets/67885972e4e940b2aa6d74024901c561_0?page=3)
- **National Park Service Land Resources Division Tract and Boundary Service**  
<https://nps.maps.arcgis.com/apps/webappviewer/index.html?id=43bc9db4736140e88e661c67460936e6>
- **Military Training Routes (MTR Segment)**  
[http://adds-faa.opendata.arcgis.com/datasets/0c6899de28af447c801231ed7ba7baa6\\_0/data](http://adds-faa.opendata.arcgis.com/datasets/0c6899de28af447c801231ed7ba7baa6_0/data)
- **Special User Airspace**  
<https://sua.faa.gov/sua/siteFrame.app>

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<sup>12</sup> <http://uas-faa.opendata.arcgis.com/>