FAQ - CIFIB

What is Canadian In-Flight Information Broadcasting Association?

The Canadian In-Flight Information Broadcasting Association (CIFIB) is a not-for-profit corporation whose goal is to improve the situational awareness and safety of General Aviation pilots through the provision of Canadian aviation **weather** and selected **traffic** information while in flight. CIFIB broadcasts are a public service, available free to any pilot or aircraft equipped with appropriate receivers.

Who are the people behind CIFIB?

Truly a grassroots effort, CIFIB started informally in Southern Ontario in 2019. A group of pilots were discussing the lack of weather information in flight and looking to the US ADS-B system with some envy. Attempts were made to engage Transport Canada and NAV CANADA, but they were not receptive. We started to contemplate designing and implementing a UAT system without government support. By 2020, a transmitter was designed and the first one was installed in Stratford, Ontario (CYSA).

CIFIB personnel are all volunteers who are not compensated other than reimbursement for direct expenses for materials and services required to implement CIFIB's goals. Over the years, the original founders and members of CIFIB have contributed many thousands of hours of their time, their aircraft, other vehicles, and their own funds to launch and operate CIFIB. They are committed to expanding and operating the CIFIB network for the foreseeable future.

Through interested and supportive members of the aviation community, CIFIB also obtained free legal and financial expertise!

Is CIFIB compatible with UAT in the United States?

Yes. If you are equipped to receive 978 MHz UAT (Universal Access Transceiver) that is available in the US, you will receive CIFIB's UAT in Canada. The services provided in Canada and the United States differ, but the hardware used to receive and display the services are the same, allowing cross-border compatibility for Canadian and US pilots and aircraft.

Is CIFIB supported by Transport Canada or NAV CANADA?

Transport Canada and NAV CANADA are aware of the CIFIB project and its growing network, but they do not officially support CIFIB.

NAV CANADA "owns" the 978 MHz frequency that CIFIB uses for UAT broadcasts. When CIFIB applies to ISED (Innovation, Science, and Economic Development) Canada for a radio transmitter licence, the application goes to NAV CANADA for approval. NAV CANADA has stated that they have no intention of using 978 MHz, and have approved all of our radio licence applications.

NAV CANADA facilitated an agreement with the US FAA whereby the FAA provided locations and technical information about US stations so that CIFIB can configure its stations to avoid interference with nearby US-based UAT stations.

NAV CANADA is our Site Partner for CYOW. This site allows them to observe CIFIB in operation. There have been informal conversations about NAV CANADA allowing CIFIB to set up and operate transmitters at other NAV CANADA locations, though nothing has been formalized to date.

CIFIB and Transport Canada have held discussions about increasing the amount of weather information that can be broadcast. Currently, CIFIB broadcasts weather from NAV CANADA, Environment Canada, and some approved sources listed in the CFS. CIFIB is working with Transport Canada on a way to include weather information from other, private weather stations that don't meet

the stringent requirements imposed on approved sources. The shared goal is to improve weather information primarily for VFR pilots.

What weather information does CIFIB broadcast?

The FIS-B portion of CIFIB broadcasts include local and regional weather information, including METARs, TAFs, and Environment Canada precipitation radar. Planned services include NOTAMs, lightning, cloud tops, freezing/icing level, upper winds and temperatures aloft, PIREPs, AIRMETs, SIGMETs, turbulence, MOS, and weather from a wider variety of private weather stations.

What traffic information does CIFIB broadcast?

The TIS-B portion of CIFIB broadcasts include some area traffic information, including FLARM and OGN (gliders), and (flight school) aircraft equipped with NemoScout.

CIFIB is also part of a project (https://airmarket.io/iart/) to bring drone traffic into the picture. At an Alberta test site, BVLOS (Beyond Visual Line of Site) drone operations are being tested. A CIFIB transmitter broadcasts drone positions as part of the TIS-B portion of the transmissions. This test site is part of a large initiative led by AIRmarket and involving Transport Canada, NAV CANADA, drone manufacturers, and drone operators to integrate drones into airspace management in Canada.

Does CIFIB transmit Mode C traffic?

No. Although discussions with NAV CANADA have occurred, at this time Mode C traffic information is not available to CIFIB. Also, there are significant technical challenges to broadcasting Mode C traffic information that would integrate with ADS-B traffic information. The main challenge is avoiding false alerts about a nearby aircraft that is actually the Mode C target of the receiving aircraft.

Is CIFIB related to NAV CANADA's ADS-B Out initiative?

No. NAV CANADA is focused exclusively on using 1090 MHZ for their ADS-B Out traffic initiative. NAV CANADA's system is satellite-based, though they are introducing supplementary ground stations. NAV CANADA satellites and ground stations are **receive-only** and do not broadcast weather or traffic information. 1090 MHz is used exclusively for traffic information, with insufficient bandwidth to support additional services.

In contrast, CIFIB is **broadcast-only**, using 978 MHz UAT for weather and traffic information. CIFIB's 978 MHz UAT system is completely independent from NAV CANADA's 1090 MHz services.

In the US, the FAA mandated the move to ADS-B Out but recognized that 1090 MHz would be overwhelmed if too many aircraft were equipped to use it. The FAA added 978 MHz UAT to reduce congestion on 1090 MHz and to provide more equipment options. As an incentive to GA pilots, weather information (FIS-B) was added. The FAA provides a ground-based interconnection between the two frequencies so that an aircraft equipped to receive only one frequency will see aircraft broadcasting on either frequency. This capability is not provided by CIFIB or NAV CANADA.

Receivers

What equipment do I need to receive CIFIB transmissions?

CIFIB transmits on 978 MHz using the UAT standard. Sometimes called ADS-B In, UAT receivers are commonly included in newer panel-mount avionics, and are widely available in portable units such as Stratus, Stratux, Garmin GDL, Dynon Skyview, uAvionix SkyBeacon, and many others. When portable receivers are used, a portable tablet or phone and an EFB (Electronic Flight Bag) app, such as Foreflight, Garmin Pilot, or FltPlan Go, are required to display the received information. For pilots already equipped with a suitable mobile device, the additional one-time cost of purchasing a 978 MHz receiver for CIFIB transmissions can be as low as a few hundred dollars.

Is there a cost to me to receive CIFIB's transmissions?

No. CIFIB transmissions are available for **free** to any pilot/aircraft with a system capable of receiving and displaying the data. These systems are available today at decreasing costs.

Ground Stations

Why set up a CIFIB site?

The CIFIB service can help reduce aviation accidents such as mid-air collisions and weather-related accidents. A CIFIB site improves safety in the area, which can attract pilots and increase airport revenues (fuel, restaurant, use of other airport and community services). FBOs would be able to provide more services (fuel, repairs, parking, others). Flight training programs could make use of CIFIB information as part of training.

What is required to set up a CIFIB site?

A local organization or group applies to become a **Site Partner** of CIFIB and agrees to fund the installation and operation of the site. A suitable and secure location, with power and Internet connection, is identified. CIFIB obtains a 978 MHz radio licence from ISED and completes a Land Use application with NAV CANADA. A qualified installer is contracted to install the hardware. Once the site is operational, local involvement is minimal. CIFIB monitors the equipment and is able to remotely make changes as required.

How much does a CIFIB site cost to set up?

The one-time fee for acquisition, basic installation, and setup of CIFIB ground station hardware is **$2500**. The annual fee of **$1900** covers operation, insurance, and funding for replacement if a transmitter should fail. (Federal and provincial taxes are extra.) As more stations are added, annual fees are expected to decrease.

CIFIB recognizes that these expenses may be challenging for Site Partners, so we keep expenses as low as possible. On the other hand, the ADS-B system in the US cost many billions of dollars to set up and operate. We consider our costs to be quite reasonable.

Does the Site Partner own the equipment?

No. CIFIB owns and maintains the equipment. If the transmitter should fail, CIFIB will replace it. If the Site Partner decides to end the agreement, the equipment must be returned to CIFIB.

What insurance does CIFIB provide?

CIFIB has insurance with $5 million coverage for liability. Coverage includes CIFIB, its members, and Site Partners that sign or co-sign the agreement with CIFIB. Because CIFIB is transmitting information that is available publicly elsewhere, our insurer believes there is little risk to CIFIB. The insurance ensures that CIFIB would have strong legal representation to protect the interests of CIFIB and our Site Partners.

What is the range of a site?

Site range is affected by topography, aircraft altitude and attitude, and receiving equipment. In flat areas, a range of 40NM or more is expected at 5000' AGL. Ranges as high as 80NM have been reported, though these ranges are considered exceptional.

Where are CIFIB sites now?

CIFIB operates sites in several provinces. See https://cifib.ca/sites for the latest map and details.

Coverage

Will Canada have national UAT coverage like the US?

No. With a larger land area and 1/10 the population, truly national coverage is not practical in Canada. CIFIB expects ground stations to cover areas with higher traffic volumes and will prioritize sites that fill in gaps with more GA traffic. While there is no upper limit to the number of ground stations, CIFIB expects to eventually operate about 100 ground stations.

Membership

Will I have any control over how CIFIB operates?

A Site Partner nominates one person to become a member of CIFIB. Members may attend virtual meetings (including the Annual General Meeting) and receive CIFIB communications. CIFIB welcomes and considers all feedback to guide future operations.

What if I want to leave CIFIB?

If a Site Partner cancels or does not renew the service, CIFIB will attempt to resolve any issues at stake, and may seek another person or organization to continue operations at the same site. If no resolution is found, the transmitter will be shut down. The CIFIB agreement requires that the transmitter be returned to CIFIB so that it can be redeployed.

Other

Can I support CIFIB without committing to a ground station?

Yes! You can support CIFIB financially by making a donation (see http://www.cifib.ca/donate). All fees and donations are used to set up and operate the CIFIB network. You can also support CIFIB by encouraging groups to set up a ground station in their area and by spreading the word that CIFIB provides 978 MHz UAT in Canada.

What are other countries doing?

Beyond the US and Canada, other countries are actively working to integrate weather and traffic services into their airspace management. CIFIB has been contacted by interested parties in Europe, Australia, India, and other countries. With CIFIB's limited resources and our mandate to bring UAT services to Canada, we decline to provide equipment abroad. When our Canadian effort is more established, we may consider selling equipment abroad and using those funds to support and reduce costs for the CIFIB network in Canada.