



APPLYING FOR AN ARGOS PROGRAM

Introduction to the Argos System

The Argos system consists of multiple polar-orbiting satellites providing full global coverage. These “low Earth” satellites make them ideal for low-power wildlife tracking and data transfer. A satellite orbit takes approximately 100 minutes and receives signals from Argos tags, known as Platform Transmitter Terminals (PTTs), operating within the 5,000 km visibility “footprint.” Due to the rotation of the Earth, this 5,000 km visibility footprint shifts 25° at the equator with each orbit. Coverage is greatest at high latitudes as every satellite orbit must pass over the North and South Poles, however, satellite passes may be hours apart at the equator.

Satellites download data received from Argos tags to ground stations in near real-time. This ensures that the majority of data are available within 30 minutes of satellite reception. Data may be accessed via the ArgosWeb website, Telnet, or automatically downloaded to the researcher’s email via the ArgosDirect or ArgosMonitor service. Argos charges apply for these additional services. Researchers using Wildlife Computers tags can configure their Wildlife Computers Data Portal to automatically download and process their Argos data. The Wildlife Computers Portal is free of charge and ArgosDirect and ArgosMonitor services are not required. Wildlife Computers also has an app to predict when satellites will be overhead. You can learn more here: <https://wildlifecomputers.com/blog/utilizing-argos-pass-analysis/>

The default processing is a Kalman filtering algorithm to provide more locations with outlying locations improved. The Kalman filtering option also provides an error eclipse estimate for every location with one or more messages. For best results from Kalman filtering, tags must be “initialized” by obtaining a good location close to the release site and should be programmed to transmit every day. An accurate maximum average tag speed should be submitted in your Argos ID application form to ensure maximum location accuracy.

| Argos Location Class | Stated Accuracy (Radius of Error) | Messages Received Per Satellite Pass |
|----------------------|-----------------------------------|--------------------------------------|
| 3 | < 250m | 4 or more |
| 2 | 250m - 500m | 4 or more |
| 1 | 500m - 1500m | 4 or more |
| 0 | >1500m | 4 or more |
| A | Not Stated | 3 |
| B | Not Stated | 1 - 2 |
| Z | No Location | Invalid Location Attempt |
| Fastloc GPS | 20m - 70m | 1 or more |

Figure 1—Argos Accuracy.

Applying for an Argos Program – continued

Applying for an Argos Program

If you wish to operate a location and data collection program using the Argos satellite system, your program will need be approved and unique identification numbers (IDs) assigned. You can use the online application system—<http://www.argos-system.org/become-a-user>—to describe your program and apply for PTT IDs.

Scroll down to the first tab that says “Start a program in 4 steps.” Click the green Register button and complete the information related to your program.

You will need to know the following information as you complete the application process:

- Data owner information—full contact details
- Program name—provide a name for your project (e.g., Gulf Sea Turtle Project)
- Deployment date
- Type of Argos application—wildlife
- Duration (in months)
- Planned number of platforms
- User requirements—check the box for as many requirements that are applicable to your project. This section is to provide Argos with your critical parameters. You can check boxes for the following:
 - Polar coverage
 - Global coverage
 - Location accuracy
 - Test and evaluation (manufacturer only)
 - Data throughput time
 - Low transmitter power (< one watt)
 - Transmitter small size and lightweight
 - Cost effectiveness (government users only)
 - Service continuity and reliability
 - Platform compatibility
 - System access
 - Dual GPS/Argos location
 - Other

Applying for an Argos Program – continued

- Detailed description of program objectives—provide a description of the objectives of your program. Argos will use this information to ensure that your project meets the environmental requirements of the Argos system.
- The purpose of the program—environmental or non-environmental
- The organization operating the program—government user, non-profit user, non-government user
- Agency name and contract/grant number
- Is there a significant possibility for the loss of life?
- How did you hear about the Argos system?



Note: if your application is urgent, or if you have not received confirmation of your application after several days, we recommend contacting CLS to confirm that your information was received.

Additional Services

The Argos purchase order will include additional service options. The free Wildlife Computers Data Portal can be configured to automatically download Argos data and alert users when tags transmit, therefore ArgosDirect and ArgosMonitor services are not normally required by Wildlife Computers Portal users.

ArgosDirect

ArgosDirect is an automatic data delivery service offered for an additional fee by CLS Argos and options include tag data being distributed via email, SMS, FTP, or monthly CD-ROM.

ArgosMonitor

ArgosMonitor is a fee-based service that will automatically contact Argos users when tags behave in a predetermined way. This could be when a tag enters or leaves a certain geographic area or has started or stopped transmission for a period. Generally, ArgosMonitor is not used by Wildlife Computers clients due to automatic downloading and alerts via the Wildlife Computers Portal.



ArgosMonitor and ArgosDirect are not required. These services are provided free of charge through the Wildlife Computers Data Portal.



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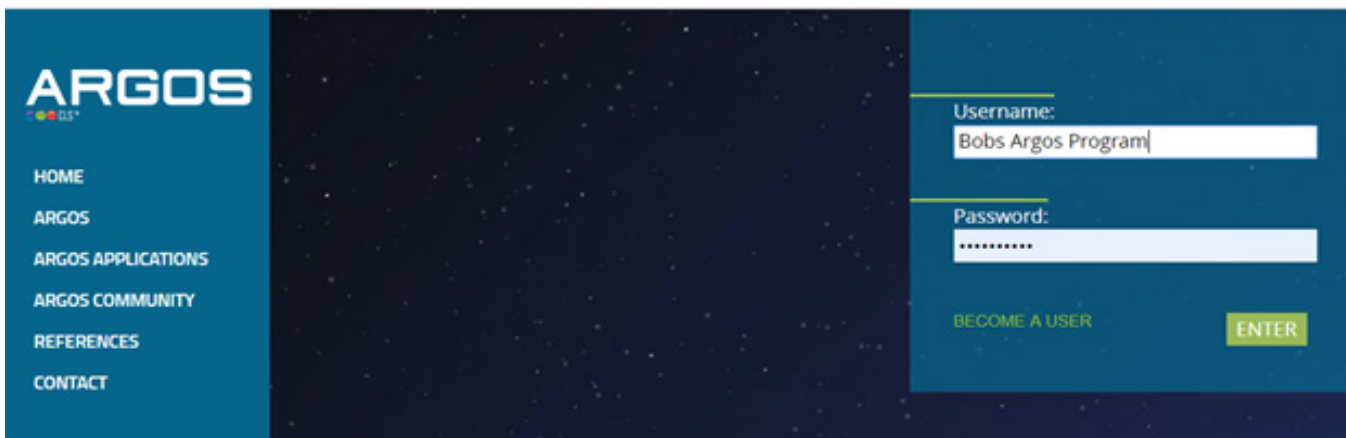
8310 154th Ave NE, Suite 150
Redmond, WA, 98052 USA

APPLYING FOR NEW ARGOS (PTT) ID NUMBERS

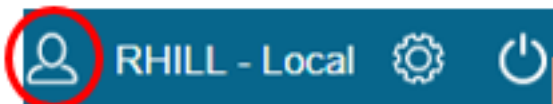
Applying for New Argos ID Numbers

The ID application process is available online, or you can contact Wildlife Computers for an ID application form that includes a recommended Argos repetition rate.

Begin the application processing by logging into your Argos account using the username and password supplied by Argos. <https://argos-system.clsamerica.com/argos-cwi2/login.html>



When logged in, click on "My Account" via the icon next to your username in the top right-hand corner.



1. Select "SUA and ID Request"



2. Select "ID Number Request"



Applying for New Argos (PTT) ID Numbers – continued

3. Select your program number and add the number of ID's required and the deployment start date.

The screenshot shows the ARGOS web interface. At the top, there is a navigation bar with the ARGOS logo and links for Data, System, and Support and help. Below this is a green header for 'Id Request'. The form contains three main input fields: 'Program:' with a dropdown menu, 'Total number of ID(s) required:' with a numeric input field and minus/plus buttons, and 'Starting date of deployment:' with a date picker. Below the form is a table header for 'All Id requests' with columns for 'Number of platforms', 'Platform type', and 'Platform model'.

4. After completing the above fields click on the '+' symbol on the far-right hand side.

This screenshot shows the same ARGOS interface as the previous one, but with the form fields filled out: 'Program: 1254 - WILDLIFE COMPUTERS TESTING', 'Total number of ID(s) required: 1', and 'Starting date of deployment: 22-07-2019'. The 'All Id requests' table is visible at the bottom, and a red circle highlights a '+' button in the top right corner of the table area.

5. The form will require the number of platforms (total number of tags), the platform family, and type. The platform manufacturer is Wildlife Computers and the platform model is typically MINI-PAT, SPOT6, SPLASH, or Avian.

The screenshot shows a modal dialog box titled 'Form ID Number Request'. It has a blue header and a close button in the top right. The 'Platform' section contains several fields: 'Number of platforms:' with a numeric input set to '1' and minus/plus buttons; 'Platform manufacturer:' with a dropdown menu set to 'WILDLIFE COMPUTERS'; 'Platform family:' with a dropdown menu set to 'MARINE ANIMALS'; 'Platform type:' with a dropdown menu set to 'TURTLE'; and 'Other platform type:' with an empty text input field. At the bottom right, a blue 'Next' button with a right-pointing arrow is circled in red.

6. Click "Next."

Applying for New Argos (PTT) ID Numbers – continued

- Next fill out the Form ID Number Request. You need to fill in “Location and data collection.”
 - For SPOT, SPLASH, and Avian—“Kalman filtering”
 - For MiniPAT—“Least Squares Analysis”

Typical repetition rates are as follows:

- Sea Turtles—15 seconds
- Sharks—15 seconds
- MiniPAT tags—60 seconds



Note: The requested repetition rate cannot be set to less than 40 seconds. For a lower repetition rate, input 40 seconds and in the Explanation field, write that a 15 or 30 second repetition rate is required as the species spends little time at the surface. See the example in #8.

Contact your Wildlife Computers representative if you aren't sure about your repetition rate or require further assistance.

- Select “Yes” to send the ID numbers to the manufacturer. The authorization for the manufacturer to access the data for one month can be left set to “No”.

Form ID Number Request

Services

Location and data collection Data collection only

Location Algorithm: Kalman filtering

The standard repetition rate allocated for platforms that are to be located is 90 seconds and 200 seconds for those with data collection only. If you require a different repetition rate, could you please specify the rate you wish to be applied with a brief explanation. Requests for exemptions will be submitted for approval.

Standard repetition rate: 90 Requested repetition rate: 40

Explanation: We really need a 15-second rep rate. A fast tag repetition rate is required as the species spends little time at the surface.

Your chosen manufacturer will need information regarding these ID numbers so that they may integrate it into your platforms. Would you like us to send a copy of your Program overview to your manufacturer?

Yes No

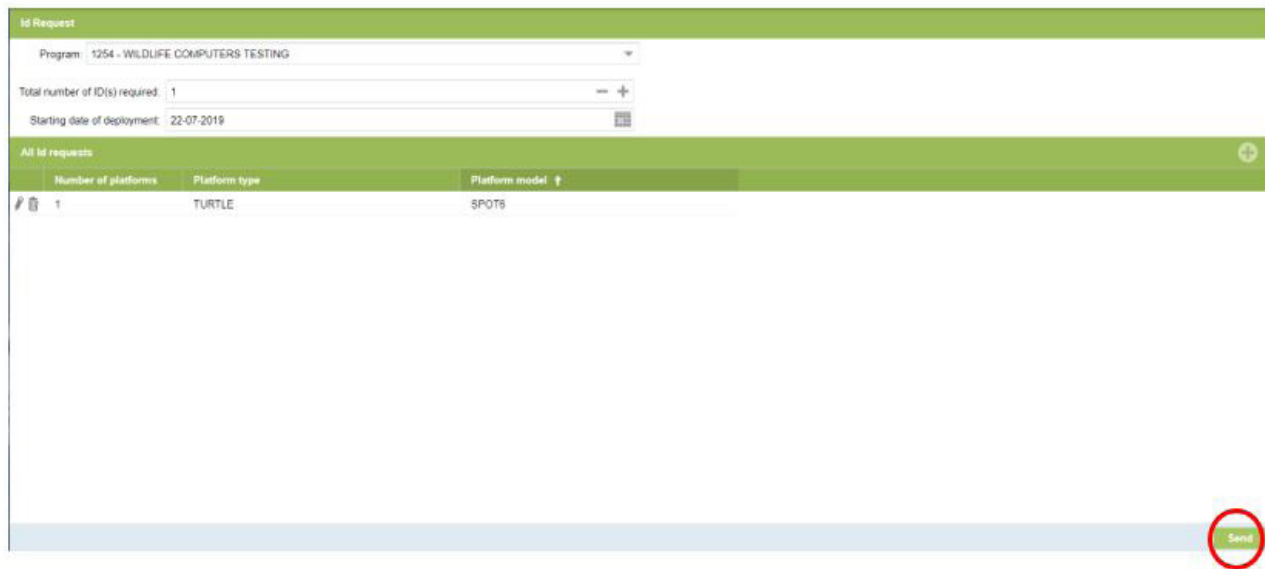
I authorize CLS to allow the manufacturer on-copy access to these platform ID numbers for one month, for testing purposes.

Back Finish

- Click “Finish.”

Applying for New Argos (PTT) ID Numbers – continued

The new ID request will appear in the ID request form. Click the “Send” button in the bottom right-hand corner to submit the form to Argos.



The screenshot shows a web form titled "ID Request". At the top, there is a green header bar. Below it, the form contains the following fields:

- Program: 1254 - WILDLIFE COMPUTERS TESTING (dropdown menu)
- Total number of ID(s) required: 1 (input field with minus and plus buttons)
- Starting date of deployment: 22-07-2019 (calendar icon)

Below these fields is another green header bar labeled "All ID requests" with a plus icon on the right. Underneath is a table with the following columns: "Number of platforms", "Platform type", and "Platform model".

| Number of platforms | Platform type | Platform model |
|---------------------|---------------|----------------|
| 1 | TURTLE | SPOTS |

At the bottom right of the form, there is a red circular button labeled "Send".

Contact Us

If you need additional help, feel free to contact us by calling +1 (425) 881-3048 or emailing tags@wildlifecomputers.com.