FAQ: Comparing New Arrow Plus Models: Arrow Gold®, Arrow Gold+™, Arrow 100® , Arrow 100+™

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Eos Positioning Systems is pleased to offer two new Arrow Series® GNSS receivers: The Arrow Gold+™ and the Arrow 100+™. These GNSS receivers are closely related to their sister products, the Arrow Gold® and Arrow 100® GNSS receivers. In order to help you determine which GNSS receiver model (standard or plus) is the appropriate one for your work needs, we have put together a quick FAQ guide.

1. What are the differences between the Arrow Gold® and Arrow Gold+™?

The Arrow Gold+™ includes all of the features of the standard Arrow Gold® GNSS receiver. However, the Arrow Gold+™ also includes these extra features or feature enhancements:

- Longer battery life
- Support for even more GNSS signals
- Ability to use B3 and L5 signals concurrently while using RTK corrections
- Support for the upcoming Galileo High-Accuracy Service (HAS)
- Support for multiplexing
- Support for multipoint

The following chart explains each difference in greater detail …

Extra Features at a Glance:

Compare the Arrow Gold® (standard model) and Arrow Gold+™ (plus model)

	Arrow Gold+™	*Arrow Gold®*
Battery Life	11 hours	7.5 hours
Longer battery life means you can work longer hours in the field without having to charge or replace your GNSS receiver battery.		
GNSS Signals Supported	• **GPS**: L1CA, L1P, L1C, L2P, L2C, L5 • **GLONASS**: G1, G2, G3, P1, P2 • **Galileo**: E1BC, E5a, E5b, E6 • **BeiDou**: B1, B2, B3, B1C, B2A, B2B, ACEBOC • **QZSS**: L1CA. L2C, L5, L1C, LEX • **IRNSS**: L5	• **GPS**: L1CA, L1P, L1C, L2P, L2C, L5 • **GLONASS**: G1, G2, P1, P2 • **Galileo**: E1BC, E5a, E5b • **BeiDou**: B1, B2, B3 (without L5) • **QZSS**: L1CA. L2C, L5, L1C
More GNSS signals increase accuracy and productivity in the field, especially in tough environments, such as under canopy.		
Treatment of B3 and L5 Signals (when RTK fixed)	Concurrent use	One or the other
Concurrent use of B3 and L5 signals while using RTK gives you access to more satellites. This in turn improves productivity in the field, especially when in tough environments (e.g., under canopy).		
Galileo High-Accuracy Service (HAS)	Supported	Not supported
Galileo HAS will provide differential corrections for GPS and Galileo satellites directly from the Galileo satellites themselves. This will dramatically improve the accuracy of the Arrow GNSS receiver in autonomous mode, worldwide. Galileo HAS is expected to be operational around 2023-24.		
Multiplexing	Supported	Not supported (requires Eos Bridge™)
Multiplexing refers to the ability to stream the output of third-party sensors to an iOS or other mobile device via the Arrow receiver's Bluetooth® connection. The Arrow Gold® GNSS receiver requires the purchase of an Eos Bridge™ to do this, while the Arrow Gold+™ has the functionality built in.		

Multipoint	Supported	Not supported
Multipoint refers to the ability to connect to multiple devices, such as an iPad and Android device, concurrently to a single Arrow GNSS receiver.		

2. What are the differences between the Arrow 100® and Arrow 100+™?

The Arrow 100+™ includes all of the features of the standard Arrow 100® GNSS receiver. However, the Arrow 100+™ also includes these extra features or feature enhancements:

- Longer battery life
- Support for Atlas® H50 differential correction signals
- Support for multiplexing
- Support for multipoint

The following chart explains each difference in greater detail …

Extra Features at a Glance: **Compare the Arrow 100® (standard model) and Arrow 100+™ (plus model)**		
	Arrow 100+™	**Arrow 100®**
Battery Life	18 hours	12 hours
Longer battery life means you can work longer hours in the field without having to charge or replace your GNSS receiver battery.		
Atlas® H50 Service	Supported	Not supported
Atlas® H50 service allows the Arrow 100+™ to obtain submeter positioning when no SBAS or RTK network is available. The estimated horizontal accuracy is 30 to 50 centimeters with Atlas® H50 service.		
Multiplexing	Supported	Not supported (requires Eos Bridge™)
Multiplexing refers to the ability to stream the output of third-party sensors to an iOS or other mobile device via the Arrow receiver's Bluetooth® connection. The Arrow 100® GNSS receiver requires the purchase of an Eos Bridge™ to do this, while the Arrow 100+™ has the functionality built in.		
Multipoint	Supported	Not supported
Multipoint refers to the ability to connect to multiple devices, such as an iPad and Android		

device, concurrently to a single Arrow GNSS receiver.

3. How important are the extra signals supported with Arrow Gold+™?

The standard Arrow Gold® GNSS receiver will provide extremely high accuracy (approximately 8mm estimated horizontal accuracy when using RTK). The extra signals supported with Arrow Gold+™ become very valuable when discussing productivity. In general, the more signals your GNSS receiver supports, the more satellites will be available to you to use during your field work. This means that when conditions become tough (e.g., canopy gets more dense), a person who is able to connect to more satellites will have an even smoother productivity. The most exciting application of this, in our opinion, is the concurrent use of B3 (BeiDou satellites) and L5 (GPS satellites) when using RTK as your differential correction source. This concurrent signal use drastically increases the total number of available satellites.

4. What is Galileo High-Accuracy Service (HAS)?

Galileo HAS is a highly anticipated, not-yet-released service owned and operated by the European Union. Galileo HAS will broadcast differential corrections for the GPS and Galileo constellations on the E6 signal, directly from the Galileo satellites themselves. This will dramatically improve the accuracy of the GNSS receiver in autonomous mode, worldwide. Galileo HAS is expected to be operational around 2023-24. Learn more about Galileo HAS directly from the E.U. here.

5. I currently have an Arrow Gold® or Arrow 100®, and I want to use the Eos Locate™ or Eos Laser Mapping™ solution with a sensor that is not iOS compatible. How can I get multiplexing without purchasing a plus model receiver (e.g., Arrow Gold+™, Arrow 100+™)?

Multiplexing refers to the ability to stream the output of third-party sensors (e.g., utility locator, laser rangefinder) to an iOS or other mobile device via the Arrow receiver's Bluetooth® connection. It is possible to do this with both the standard and plus Arrow GNSS models, but how you do it is a little different.
With the new plus models (Arrow Gold+™ and Arrow 100+™), this multiplexing functionality is built in. With the standard models (Arrow Gold® and Arrow 100®), you can purchase an affordably priced and recently released Eos Bridge™ device, which will allow you to achieve the same result. Contact our team for details about purchasing and using an Eos Bridge™.

6. Can you provide some examples of when I would want to use the Atlas® H50 subscription with the Arrow 100+™?

The Atlas® H50 subscription is ideal when you need to acquire ~30cm accuracy in an area where no SBAS or RTK network is available. Examples of real places where customers are using Atlas® include the Appalachian mountain region of the United States, the Caribbean,

South America (where the WAAS coverage stops), Australia (while waiting for the SouthPAN SBAS to become fully operational), and Africa (where there is currently no fully operational SBAS). Learn more about SBAS coverage here.

7. What is the price difference between the standard models (Arrow Gold®, Arrow 100®) and their plus model counterparts (Arrow Gold+™, Arrow 100+™)?

The total cost of each GNSS receiver varies based on the geographic location of the customer, regional taxes and import fees, and currency conversion rates. But generally, someone considering a standard model Arrow GNSS receiver will find the plus models to be within a similar budget range. Please contact Eos for a specific quote.