



Applanix SmartBase™

FREQUENTLY ASKED QUESTIONS

1) HOW MANY BASE STATIONS ARE REQUIRED FOR SMARTBASE?

The minimum number of stations required are 4 (maximum is 50).

2) CAN I MIX STATIONS FROM VARIOUS PROVIDERS?

Yes, that is possible – stations from commercial providers or any other source can be used. However, it is important that the coordinates are matching to each other (no tension in the network). SmartBase Quality Control will ensure the base station network is homogeneous. It runs a network adjustment to validate the coordinates.

3) WHAT DATA RATE IS REQUIRED FOR THE BASE STATIONS?

It is sufficient to supply 30s data intervals for SmartBase concept. Any higher interval will add processing time, but not necessarily accuracy.

4) DO I NEED EPHEMERIS DATA FOR SMARTBASE?

Yes, broadcasted and precise ephemeris are downloaded automatically by POSPac. This happens at the time of data import and when running “Find Base Stations” feature. POSPac would attempt to download ephemeris from the day of the mission, day before and day after. It will automatically detect the available ephemeris (e.g. precise, rapid, ultra-rapid, etc.).

5) WHAT IS THE REQUIRED BASE STATION TIME COVERAGE FOR SMARTBASE?

Time prior to mission: Applanix recommends 2 hours GNSS observation for best solution. However, a minimum of 15 minutes can be used.

Time post mission: 15 minutes is recommended and 5 minutes is minimum.

6) WHAT ARE IMPORTANT CRITERIA FOR THE PRIMARY STATION?

The primary station should be data gap free, have a low number of simultaneous cycle slips, and be close to the mission area. However, the first criteria, no data gaps, is more important than the distance to the mission area.



7) DO I NEED TO SELECT A PRIMARY STATION?

No, while POSPac can make this decision itself the user can always “overwrite” this and make their own selection.

8) WHAT IS THE DIFFERENCE BETWEEN CONTROL AND PRIMARY STATION?

Control station: This station is a fixed station for SmartBase Quality Control. The coordinates are kept fixed while the coordinates for all other stations are floated (adjusted). It is recommended to have full trust of the coordinates for the Control Station.

Primary station: This station gets the highest weight for the SmartBase region generation. It is mandatory to use a clean station with no data gaps.

9) WHICH SATELLITE NAVIGATION SYSTEMS ARE SUPPORTED BY SMARTBASE?

SmartBase currently supports GPS and GLONASS.

10) WHEN SHALL I USE SMARTBASE?

SmartBase is ideal for large mission areas to bridge long distances. It is also helpful for missions where the baseline between rover and base exceeds the 30km limitation (SingleBase approach).

11) WHAT IS THE REQUIRED BASE STATION TIME SPAN FOR SMARTBASE QUALITY CONTROL?

Assuming 30s data are used, the recommended time span is 24 hours. The minimum time span is 18 hours. This threshold is hardcoded in the software and may result in a “validation” conflict at automatic download/import process or latest when SmartBase Quality Control is run.

12) IS SMARTBASE QUALITY CONTROL MANDATORY TO RUN?

No, it is not. This is an “add-on” feature providing the user with effective tools to check the base station quality and its coordinates.

13) WHAT CAN I DO IF SMARTBASE FAILS?

If SmartBase fails, it is typically related to the quality of the primary station or the network configuration in general. The proven remedy is to select a different primary station, change the network configuration by adding another station for instance or ensure that the coordinates are all homogeneous (run SmartBase Quality Control).



14) IS SMARTBASE LIMITED TO CERTAIN APPLICATIONS?

No, SmartBase can be used in land, air, and marine applications as users see fit according to the benefits.

15) CAN I PLAN MY SMARTBASE PROJECT IN ADVANCE?

Yes, you can plan the base station coverage and SmartBase success rate in advance by using our [Applanix SmartBase Planning Tool](#). Try it for free!

16) WHY IS POSPAC ATTEMPTING TO DOWNLOAD 24 HOURS BASE STATION DATA?

It is assumed SmartBase Quality Control is run after base station import. As the threshold is set to a minimum of 18h, POSPac will attempt to download a complete day of raw observables. This is not needed if the user is importing their own stations and trusting their coordinates.