



Preparation Tool – Exploration of Relevant Test Environments

Prior to engaging with NASA programs that offer access to relevant test environments, it is useful for principal investigators (PIs) to consider a few key elements/questions so that they can get the most out of their conversations with NASA personnel. (This tool is also useful for conversations with commercial providers.) Even if you cannot address every point below, understanding where there are still gaps in your planning is useful.

We encourage researchers to be prepared to discuss:

- **A high-level overview of the technology**
 - How do you help people outside of your field understand what your technology is designed to do?
- **The technology's relevance to key [NASA gaps](#)**
- **The current [technology readiness level](#) (TRL), including:**
 - Has a benchtop unit or prototype been developed?
 - What type of testing have you performed to date?
- **The environment in which the technology will ultimately be used**
 - Consider the key characteristics of this environment and the biggest potential challenges to the technology's functionality both at the destination and in transit.
- **How the findings from testing in a relevant environment will be used**
 - How will the data you collect impact your technology development plan?
- **Optimal timing for testing in a relevant environment**
 - Consider when the technology will be developed enough to benefit from testing while not so far down the development path that test results will be difficult to incorporate.
 - Are there any critical components or subsystems that could be tested separately from the full system or before the full technology is developed?
 - Think about the biggest risks or obstacles that exist on the path between where the hardware is now and what is required to operate in the flight test environment.

There are a wide variety of ways to access relevant environment test opportunities within NASA. The list below includes a small selection of these opportunities that can serve as a good starting point:

- NASA's [Flight Opportunities](#) program
- NASA's [Tipping Point / Announcement of Collaboration Opportunity \(ACO\)](#)
- [International Space Station](#)
- [ISS National Laboratory](#)