### Hashtags: #spacetech, #bringinternettodeepspace

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### Tags: Platform

**Challenge Description**

We are pretty spoiled here on Earth with our almost constant connectivity to and through the Internet. In space, we don’t always have that luxury. NASA has developed a protocol suite that enables communications over links that are heavily delayed due to the speed of light limits for radio waves between planets, or disrupted, such as with the satellite that only passes over the Mars rover every few hours. Your challenge is to create an app that can use these protocols to focus on different types of network challenges. The apps can deal with any type of media (data packet, file, voice, video, etc.) and may address problems that you think will crop up when trying to operate with these delayed/disconnected networks. Use your imagination.

**Background**

The world’s leading space agencies have agreed that future spacecraft will communicate with Earth and among themselves using a new Solar System Internet (SSI) based on Disruption Tolerant Networking (DTN) technology. The DTN protocol suite is mature, but the number of applications that have been developed to utilize the DTN protocol suite components has been minimal.

NASA has identified several applications that would be useful for various mission scenarios. This is your change to develop innovative application ideas and implementations that take advantage of the DTN protocol suite.

**Solution Ideas**

Here are some ways for you to frame this solution:

· Your applications may use Bundle Protocol (BP) from the DTN protocol suite.

· The developed applications may use either the ION or DTN2 (two independent open source implementations of DTN) APIs for all bundle transmission and reception.

· Applications may be developed to support both the ION and DTN2 implementations, including application interoperability between the implementations.

· Existing gateways and applications that support http and file transfer over BP are available

**Sample resources**

* <http://sourceforge.net/projects/ion-dtn/>
* <http://www.dtnrg.org/wiki/Code>
* <https://sites.google.com/site/dtnresgroup/home>