LSTN
Library Space Technology Network

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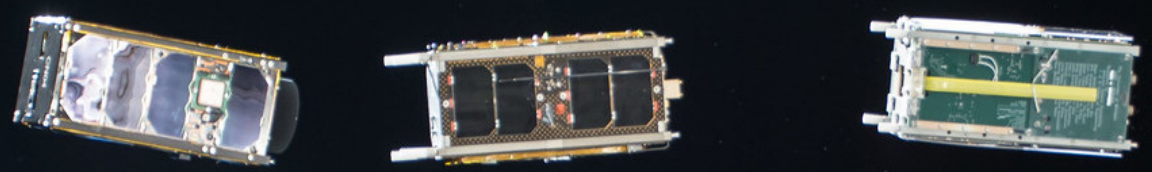
OSCW 2020

CENTER FOR ASTROPHYSICS
HARVARD & SMITHSONIAN

Libre Space Foundation

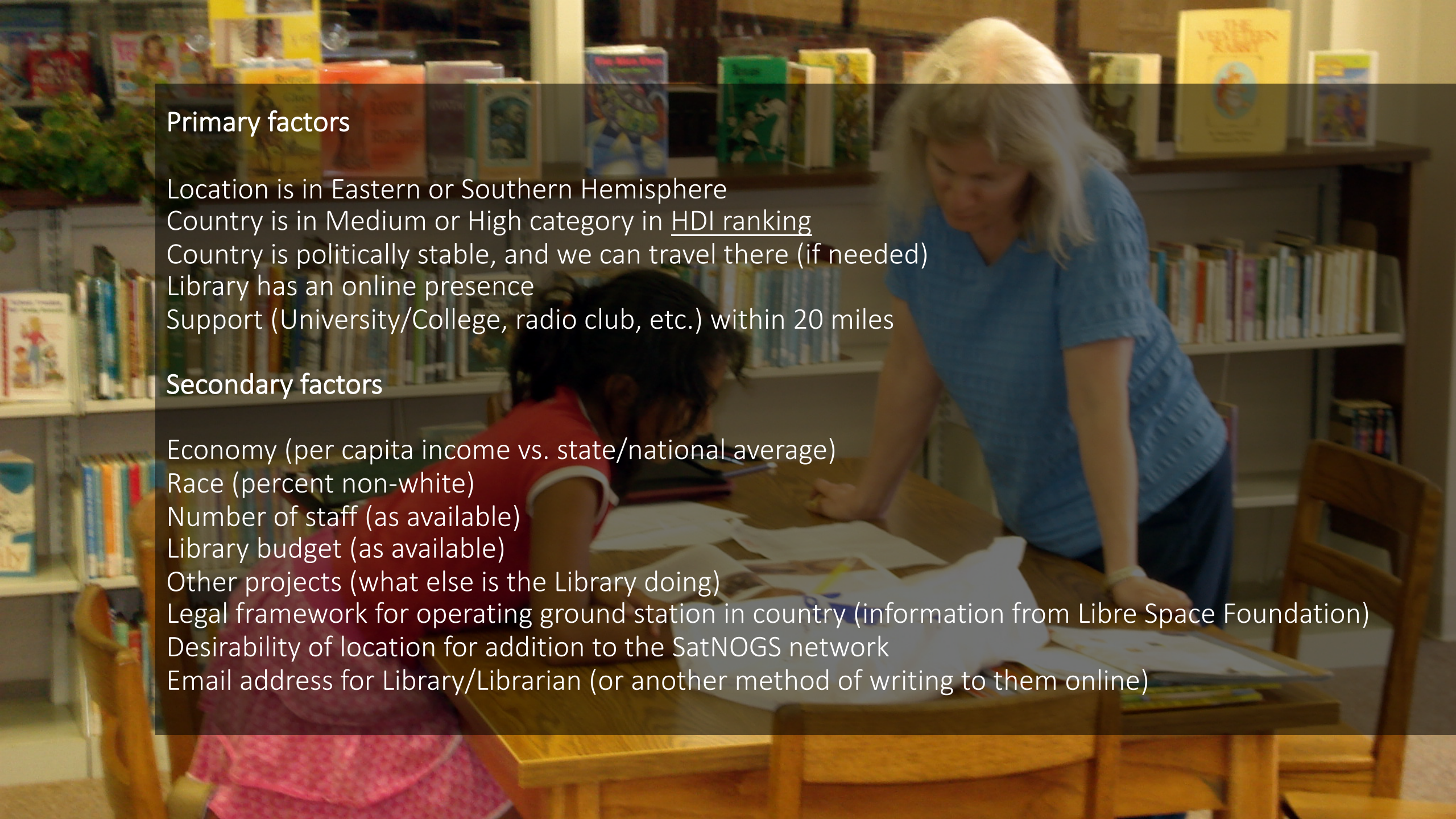


The Library Space Technology Network (LSTN) is a project that offers public library communities the chance to build and engage with space technology.

Each public library in LSTN will build and operate their own satellite ground station.

Five Public Libraries in the Pilot

Biblioteca Municipală, Chișinău, Moldova
Biblioteca de Santiago, Santiago, Chile
Cambridge Public Library, Cambridge, MA, USA
John G. Wolbach Library,Cambridge, MA, USA
Marathon Public Library, Marathon, TX, USA



Primary factors

Location is in Eastern or Southern Hemisphere
Country is in Medium or High category in HDI ranking
Country is politically stable, and we can travel there (if needed)
Library has an online presence
Support (University/College, radio club, etc.) within 20 miles

Secondary factors

Economy (per capita income vs. state/national average)
Race (percent non-white)
Number of staff (as available)
Library budget (as available)
Other projects (what else is the Library doing)
Legal framework for operating ground station in country (information from Libre Space Foundation)
Desirability of location for addition to the SatNOGS network
Email address for Library/Librarian (or another method of writing to them online)

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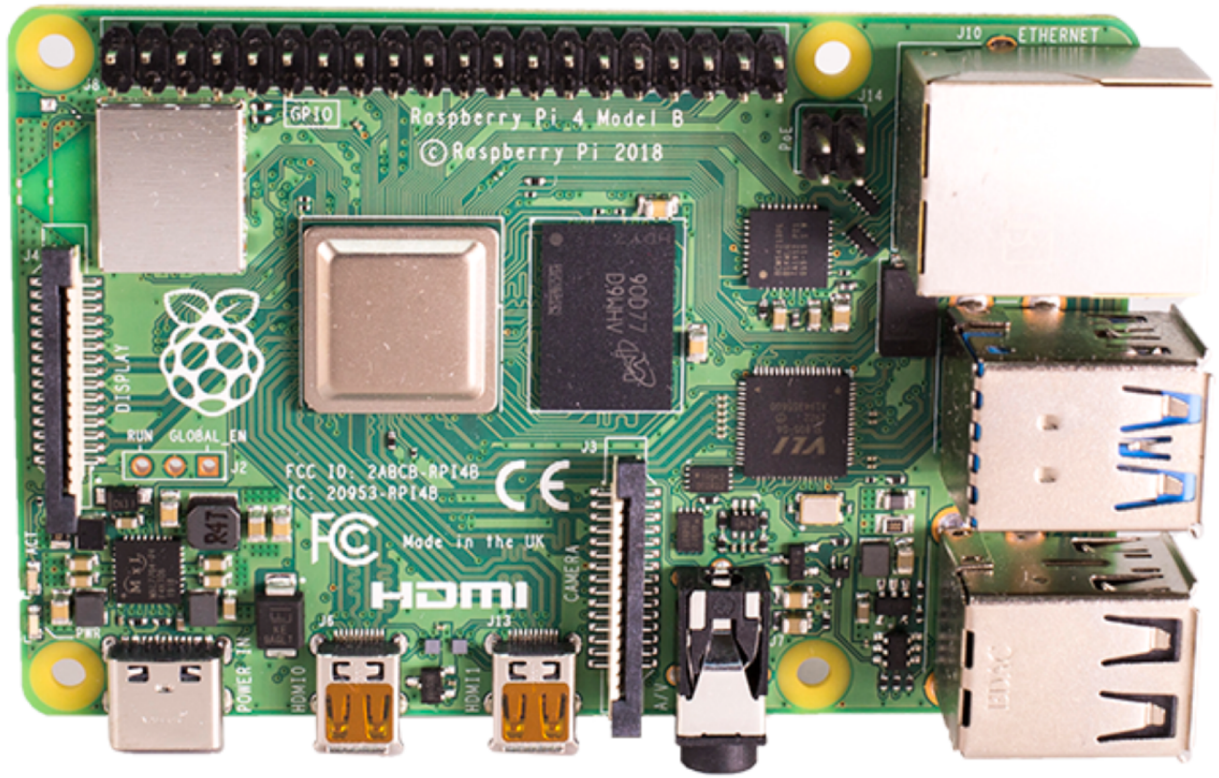
Wolbach Library

Dream

EL OTEGA DE SANTIAGO

MARATHON
Public Library
INTERNET

STN



Single Board Computer

What is it?

A single board computer is a small, inexpensive, but fully functional computer.

What does it do in the LSTN kit?

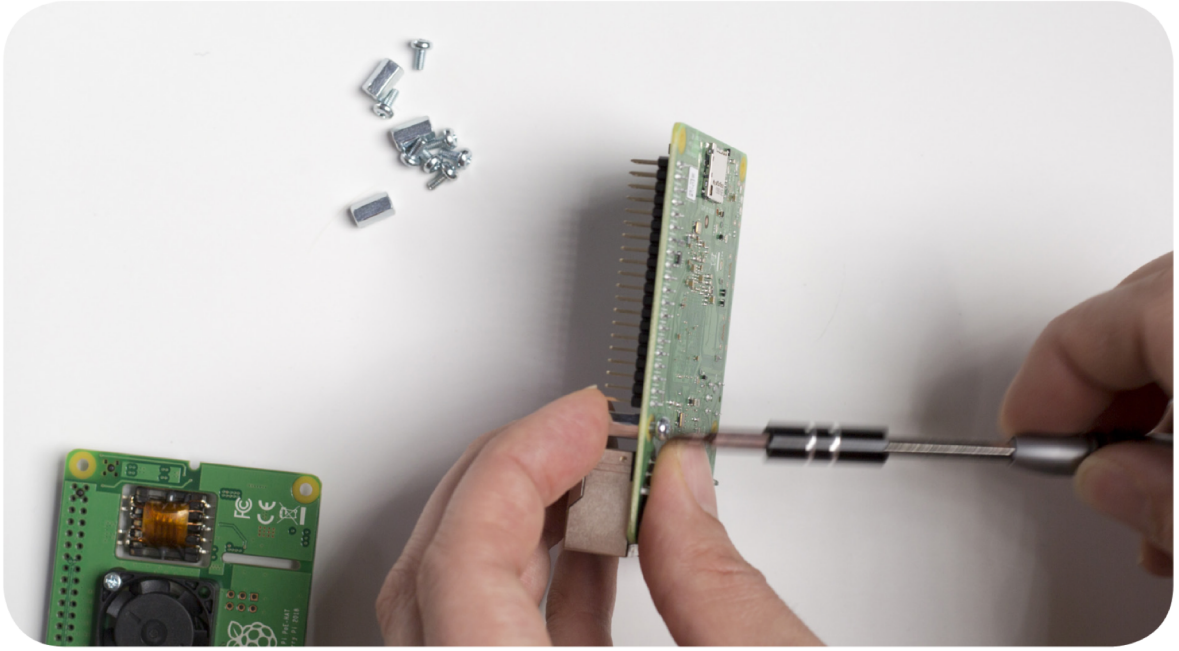
The computer has SatNOGS software installed that allows us to track and record information from passing satellites. It is connected directly to the software-defined radio (SDR) to receive transmissions from the satellites. It is connected to the internet

Parts

1. Single Board Computer
2. Power for Single Board Computer
3. SD Card
4. USB Extension Cable
5. Software Defined Radio
6. RF Cable (SDR to LNA)
7. Low Noise Amplifier
8. USB DC Cable
9. RF Cable (LNA to Outside)
10. UTP Enclosure Connector
11. Enclosure

3

Holding the screw with your finger, flip the Raspberry Pi back over and start screwing on one of the stand-offs with your fingers. After a few turns, finish tightening the screw with the screwdriver. Repeat with the three other holes on the Raspberry Pi.



LSTN

Satellite Communication Activity

First, watch this short five minute video for an introduction to this activity:

Now listen to this!

0:00 / 0:08

This is the actual communcation

LSTN Activity Idea - Submission Form

The LSTN project offers public library communities the chance to build and engage with space technology. More information is available here: http://lstn.wolba.ch/ We are soliciting ideas for LSTN activities. To submit an idea, please fill out the form below. We request that you try to fill out every field, but if you are really unsure, you can leave some fields blank.

* Required

Email address *

Your email

What is your name? *

Your answer

Can we contact you at the email address given for follow-up questions? *

With LSTN, we hope to get public libraries around the world involved with real space technology by lowering the cost and technical hurdles of owning and operating a satellite ground station.

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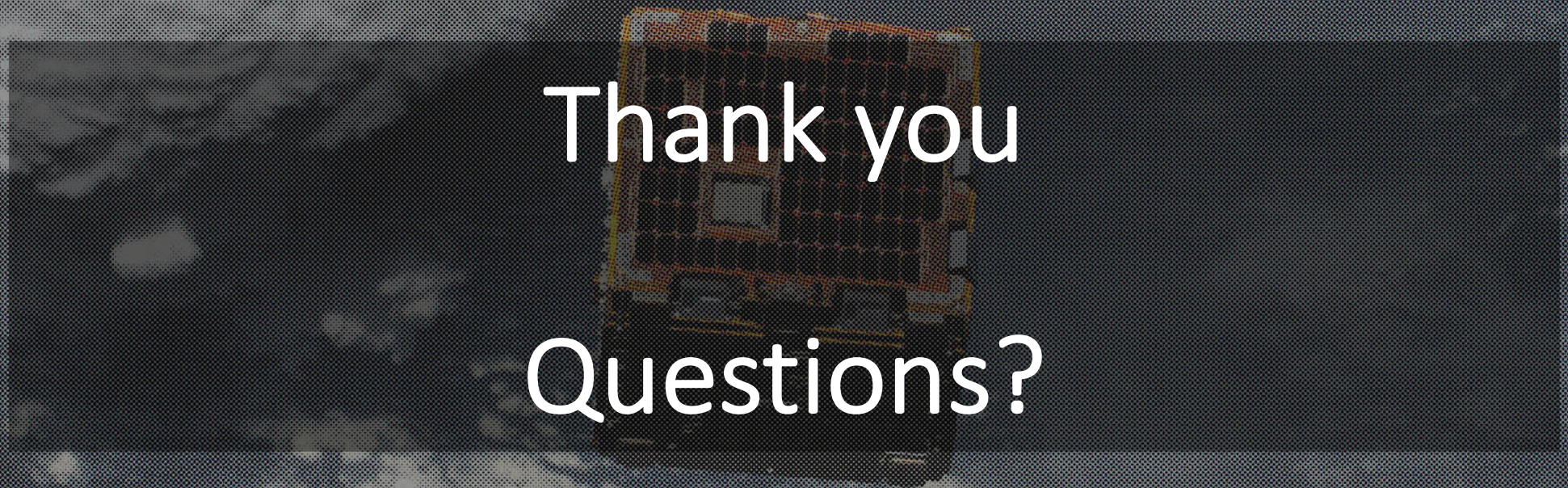

Thank you

Questions?