

My PNST story

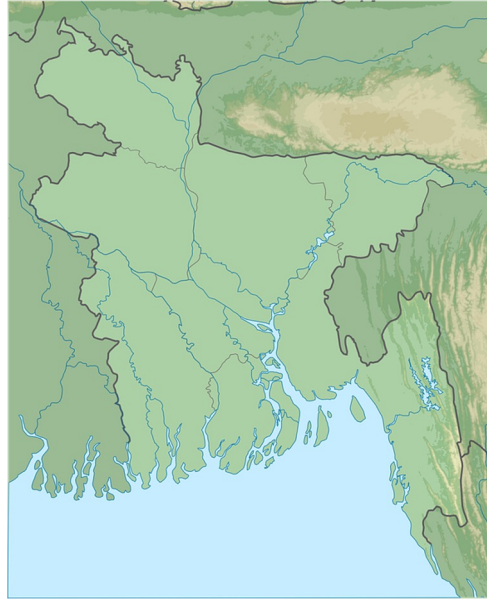
A photographic journey

Disclaimer

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- The views and opinions expressed in this presentation are solely those of the author and do not necessarily represent those of their current or previous employers.

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Education	Undergrad, BRAC University, Dhaka, Bangladesh M.Sc., Kyushu Institute of Technology PhD., Kyushu Institute of Technology
Specialty	Embedded System Engineering, specialized in low power & harsh environment. Automation.
Affiliations	IEEE
Hobby	Motorsports, DIY electronics, Photography.





Japan >> 378,000 Sq. KM
126 Million people

Bangladesh >> 148,500 Sq. KM
165 Million People







Dr. Khan,
Faculty,
KyuTech.
(Also KyuTech Alumni)

Dr. Rhaman,
Faculty,
BRACU.
(Also KyuTech Alumni)

Aug 13, 2013.



Photos from my 'exchange program'. (2014 ~ 2015)



Abdulla Kafi,
Faculty,
BRACU.
(Also BRACU Alumni)



My Undergraduate Thesis

Title: “UAV Based Remote Sensing”

Purpose: To create a platform for low cost, quick response remote sensing. Using cheap RC planes and android devices a workable, low resolution image can be acquired, which can later be automatically processed to provide user with beneficial information.

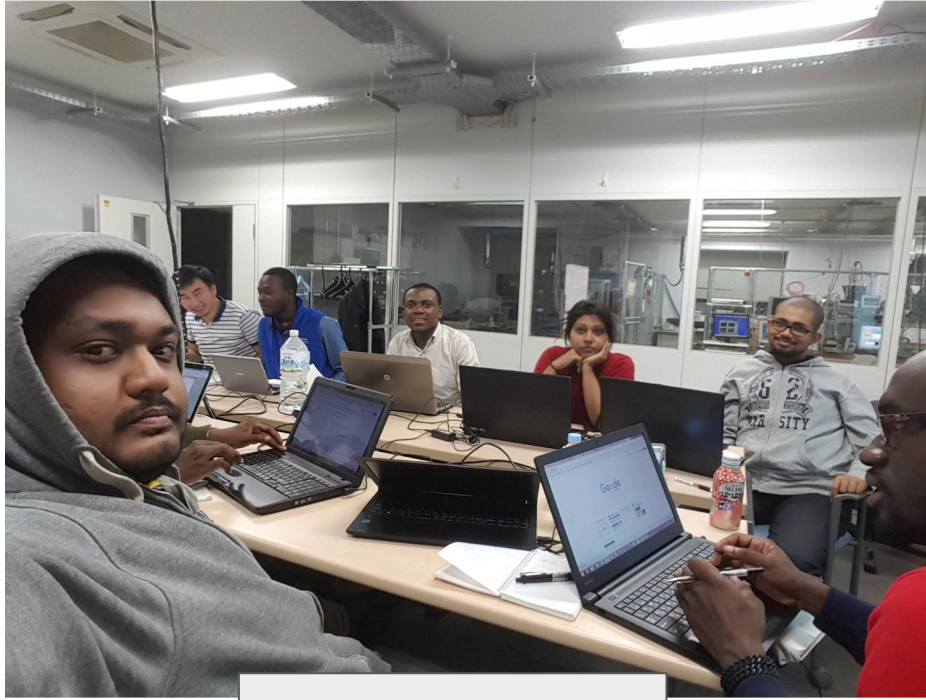


Back to KyuTech (on PNST program)



Oct 2015

BIRDS project:



Meeting until 1 AM



Building prototype



Test your own design



18 Feb, 2016.
4 a.m.
KyuTech.



ভাষা: বাংলা
শব্দ: আনন্দ



25日、小倉
オープンさ
発表した。一
京町跟天街
ほか北九州
力して、文
信や各種イ
催を推進す
文学サロ
れるのは、
階の約83平
文化施設の
観光・街景

14

Apr 2018

Same jacket/hoodie
But 2 years gone.



PhD topic: How to reprogram satellites in Space?

Once you launch a cubesat, you can't reprogram it.
Because of:

1. Low power
2. Low memory
3. Low bandwidth etc...

(Sorry, no interesting pictures during this period)



Little off topic: tips if you are selected for PNST

These are not academic tips. But I hope they'll be useful for your day to day life if you are selected for PNST.

- Japanese skills are not necessary, but you can make new friends.
- Openly discuss / share your ideas and confusions.
- Super markets sell off their food items at half price in the evening. You can eat out everyday without overspending ;)
- You don't need to bring everything when you move to japan. There are affordable shops nearby.

Professional life: Skygate Technologies

A Tokyo based startup company.

Mission: Provide “Ground Station as a Service” to satellite companies.

Key points:

- Use of SDR
- Platform independent API access

Note: As of 2023, the company is focusing on a different product.



ミッション

存続可能性に関する課題を解決する

災害、感染症、力による現状の変更。

いま、私たちの社会は、誰も予測できなかった未曾有の事態に、日々向き合っています。
社会、ビジネスが存続するために、クリティカルなダメージをどうやって防ぐか。

私たちは、あらゆる空間を横断して、存続可能性についての課題を解決します。



<https://www.skygate-tech.com>

[Company webpage](https://www.skygate-tech.com)

My first job was full remote



Current workplace: iQPS

A space startup company based in Kyushu with a mission to observe the earth almost anywhere within 10 minutes.



[link to source.](#)



[Concept Video](#)

What is SAR?

Normally a camera takes images by visual spectrum. But what if you need to know more details? In-depth?

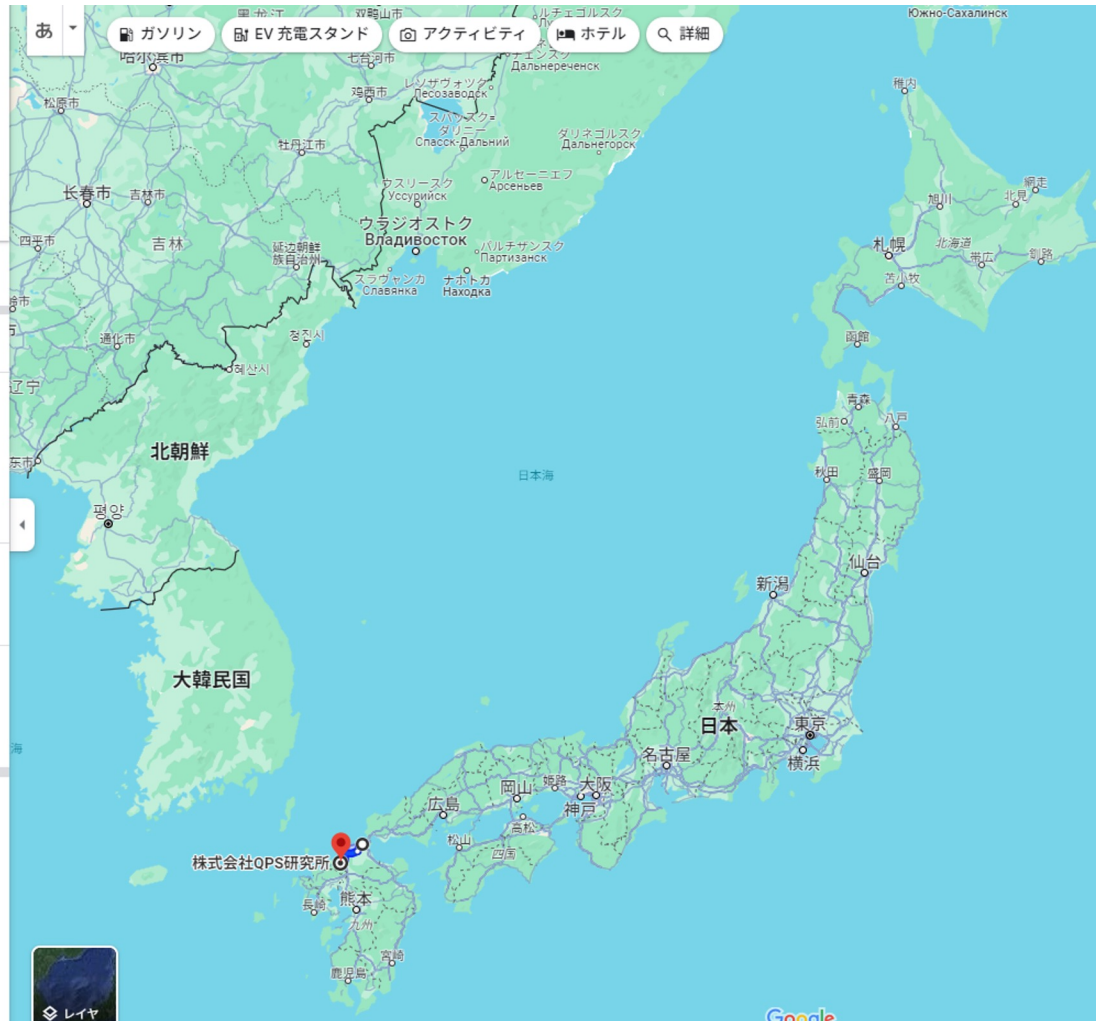
What if you could “x-ray” earth?

Synthetic Aperture Radar or SAR was conceptualized in 1950's. Only recently we have the technology to offer it as a service.



[Let Scott Manley Explain SAR...](#)

The screenshot displays the Google Maps application interface. At the top, there are icons for different transportation modes: walking, car, bicycle, and public transit. Below these, a search bar contains the text "九州工業大学 戸畑キャンパス、〒804-85". A red location pin is placed on the map, and a blue route is shown. The route starts at the search location and ends at "株式会社QPS研究所、〒810-0001 福岡県". The route is labeled "九州縦貫自動車道 経由" (via Kyushu縦貫自動車道) and "北九州高速4号線/ルート4と九州縦貫自動車道 経由" (via Beppu Expressway 4/Route 4 and Kyushu縦貫自動車道). The estimated travel time is "1時間 1分" (1 hour 1 minute). A warning icon (triangle with exclamation mark) indicates that the route includes a toll section. Below the route, there is a section for "「株式会社QPS研究所」周辺のスポット" (Spots near QPS Research Co., Ltd.), which lists nearby locations: レストラン (Restaurant), ホテル (Hotel), ガソリンスタンド (Gas Station), 駐車場 (Parking), and もっと見る (See more).



CROSS TALK

TALK 02

Kyutech (九工大) 出身組クロストーク

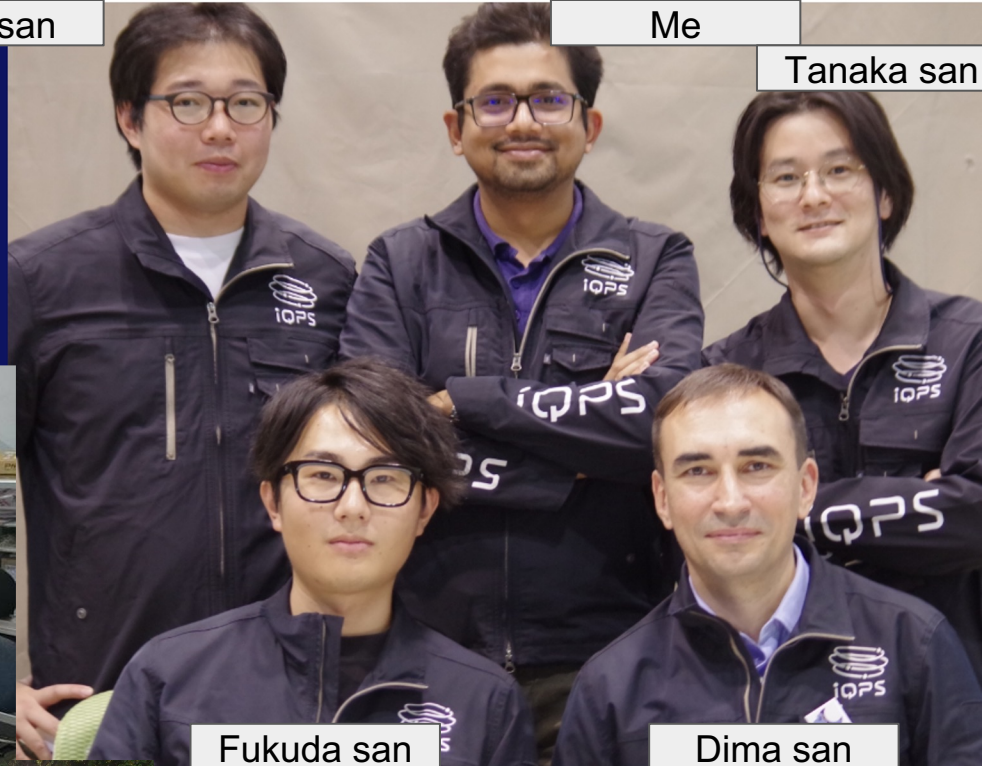


[source](#)

Asari san

Me

Tanaka san



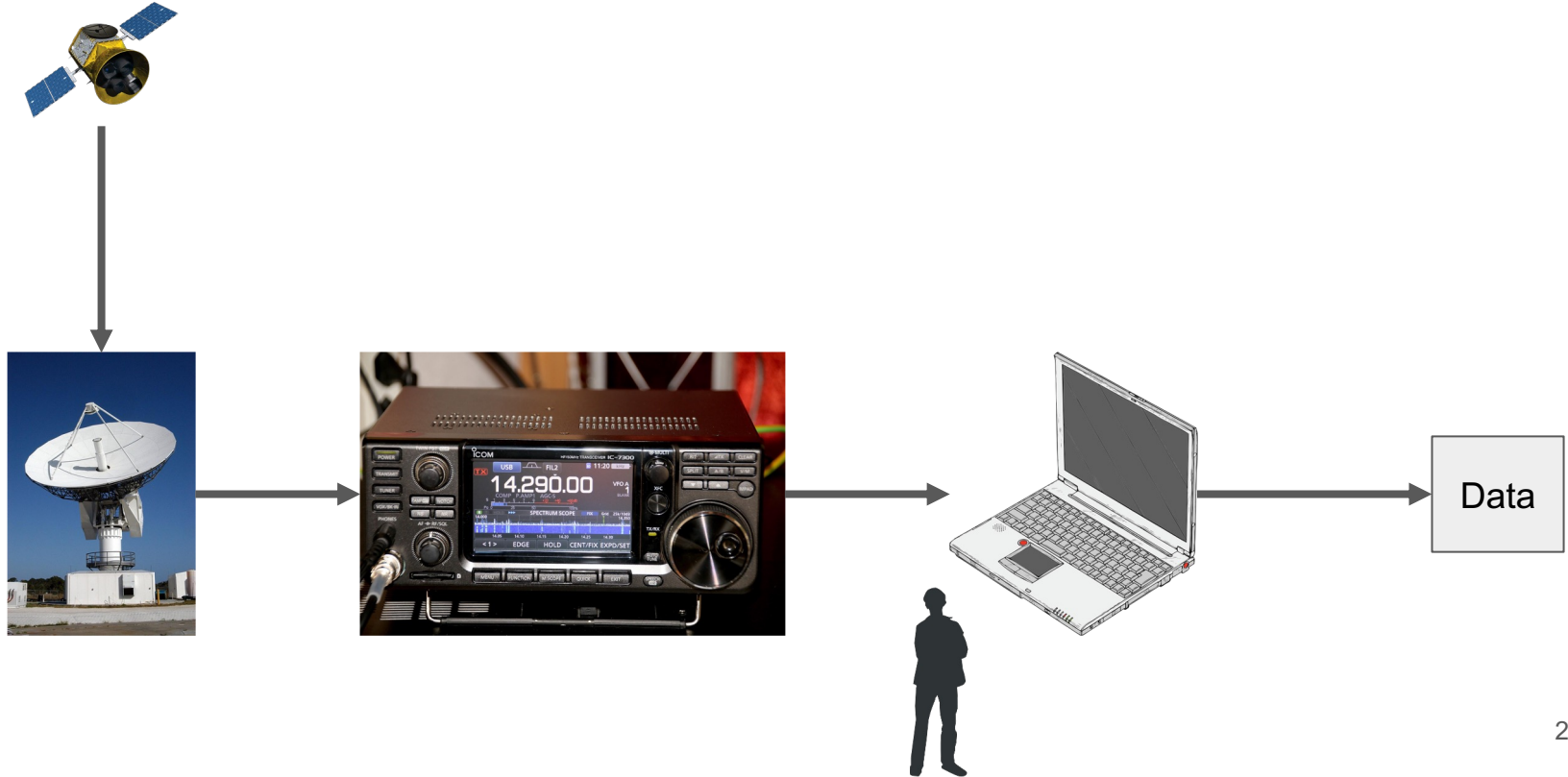
Fukuda san

Dima san

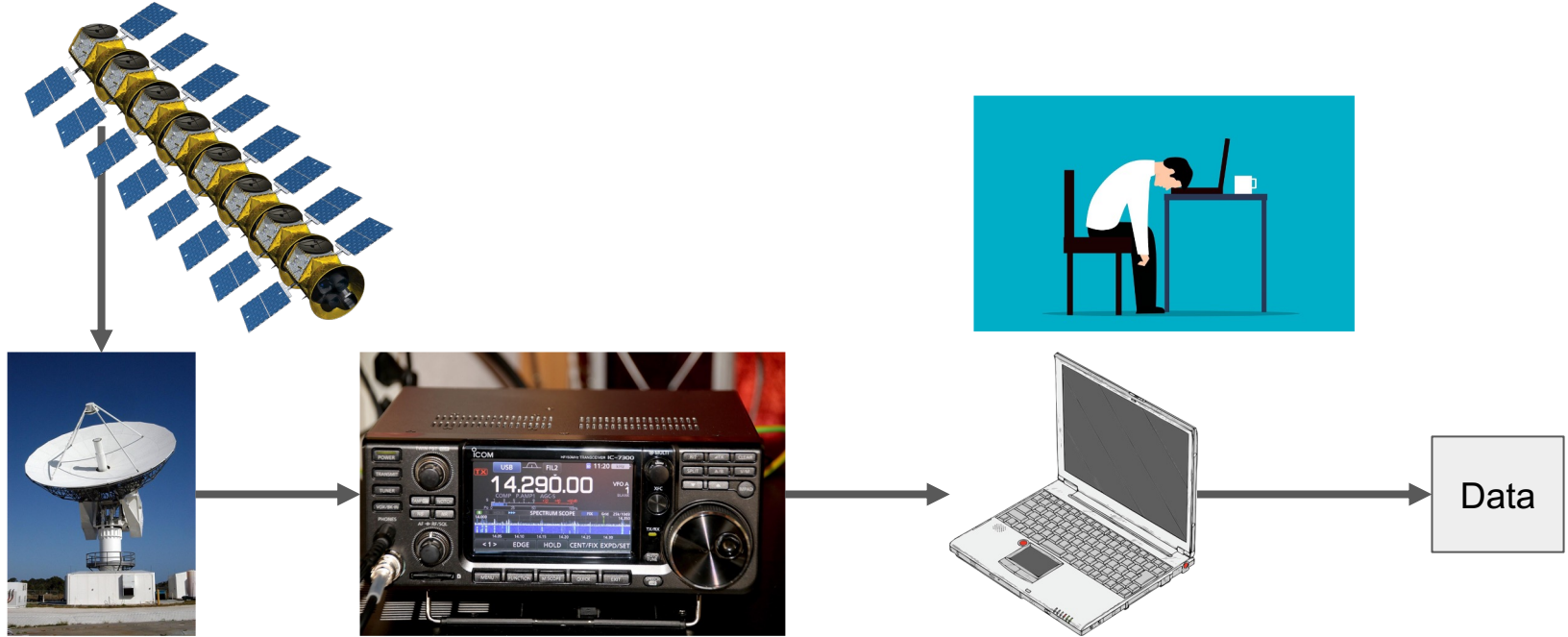
[Source link](#)



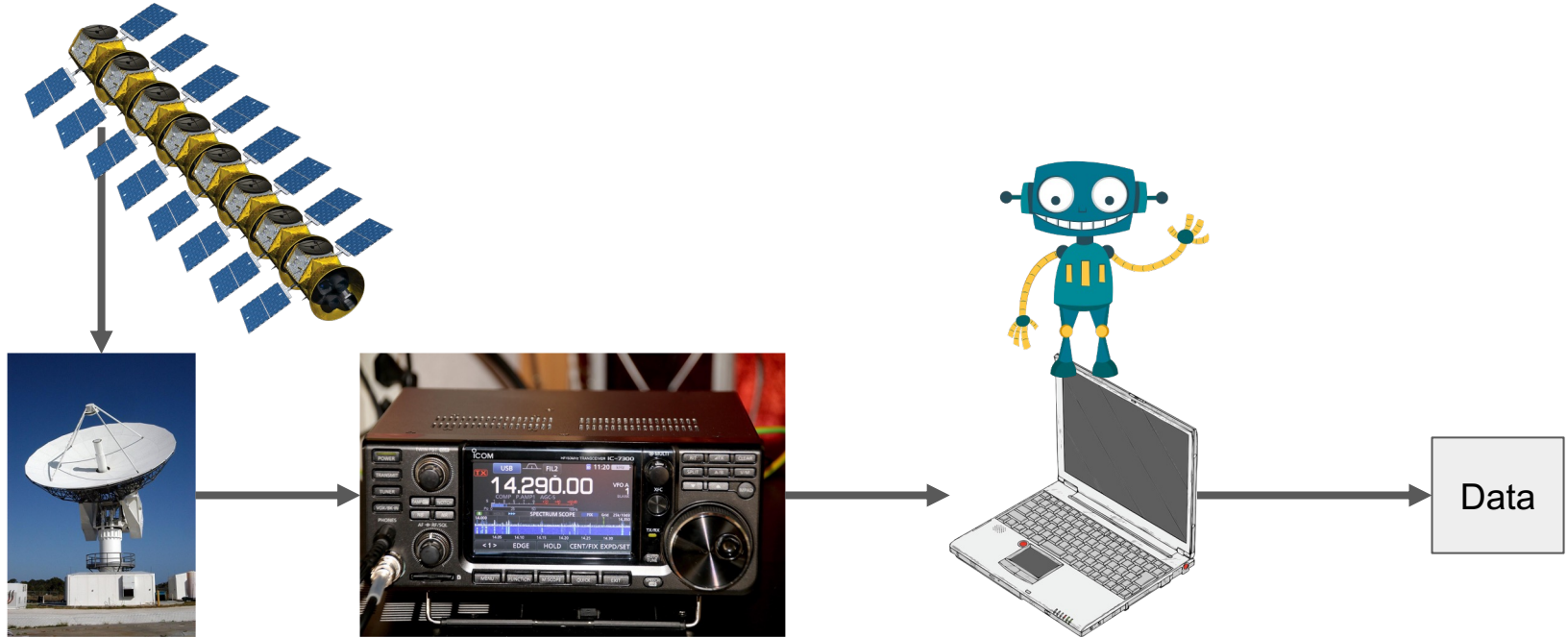
How do we receive data from satellites? What's my job?



Now imagine for 36 satellites



We need a solution. (That's my job. I automate things)

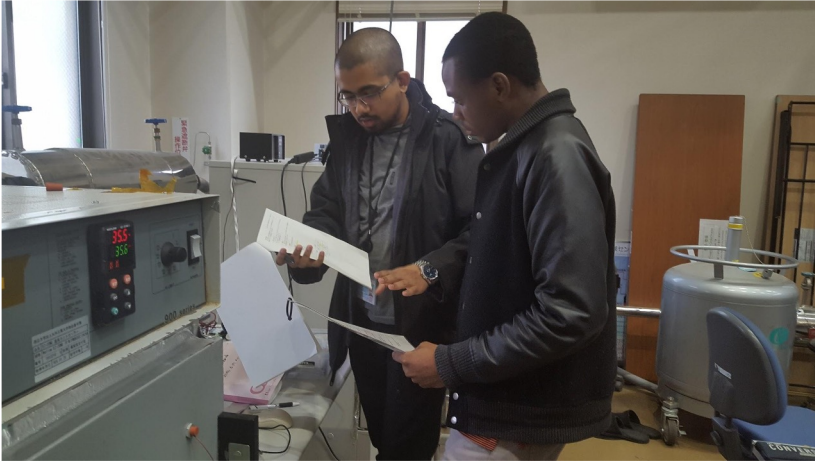


Additional information: What makes GS so Challenging?

- Satellite tracking
- Doppler correction
- Locking onto satellite signal
- Successfully sending command to satellite
- What happens when there are more than 2 satellites?
- Missing communication packets
 - Due to satellite attitude control
 - Due loss of satellite power
 - Due to hangup of satellite hardware
- Different satellites use different communication protocols.
- License and legal issue.

Why should you come to KyuTech?
Why PNST?

Get involved



Double checking our
experiment



Fit check by JAXA.

No.2 reason: People



Meeting Airbus CEO



Meeting Japanese Astronaut

No. 3 reason: People



No 4. Good weather



My favorite place to relax.

No 5. Testing testing testing



Our testing equipments are only second to JAXA

