

AQUARIUS/SAC-D

6th Aquarius/SAC-D Science Meeting

SAC-D Data System and Data Distribution

Lucas Bruno

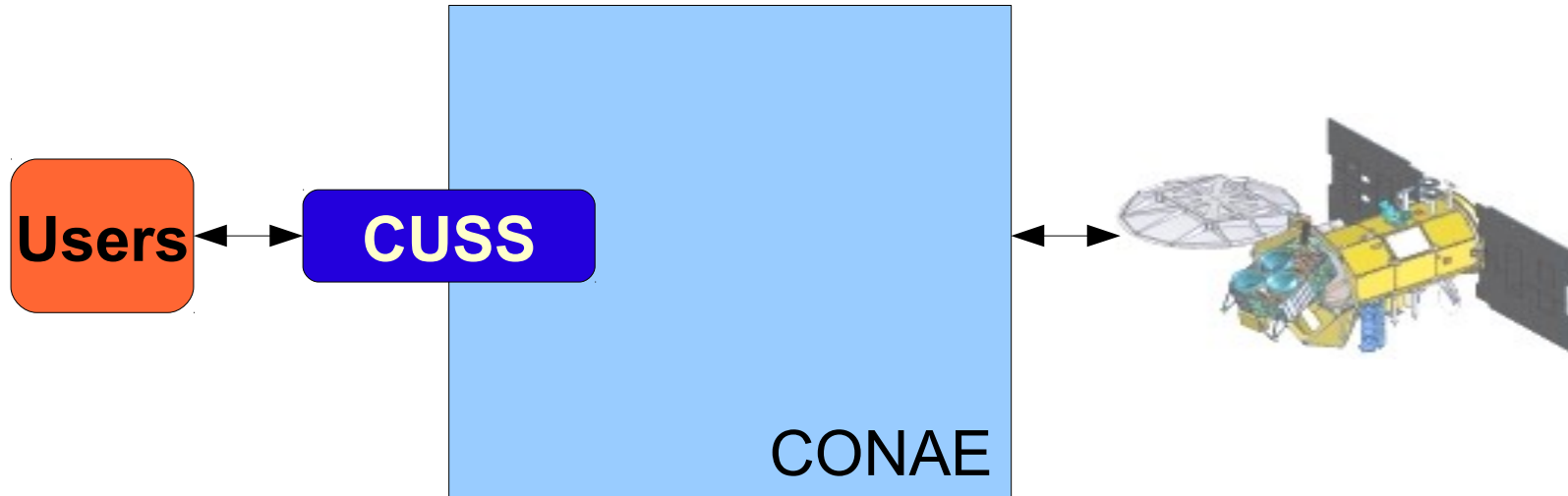
19-21 July 2010
Seattle, Washington, USA

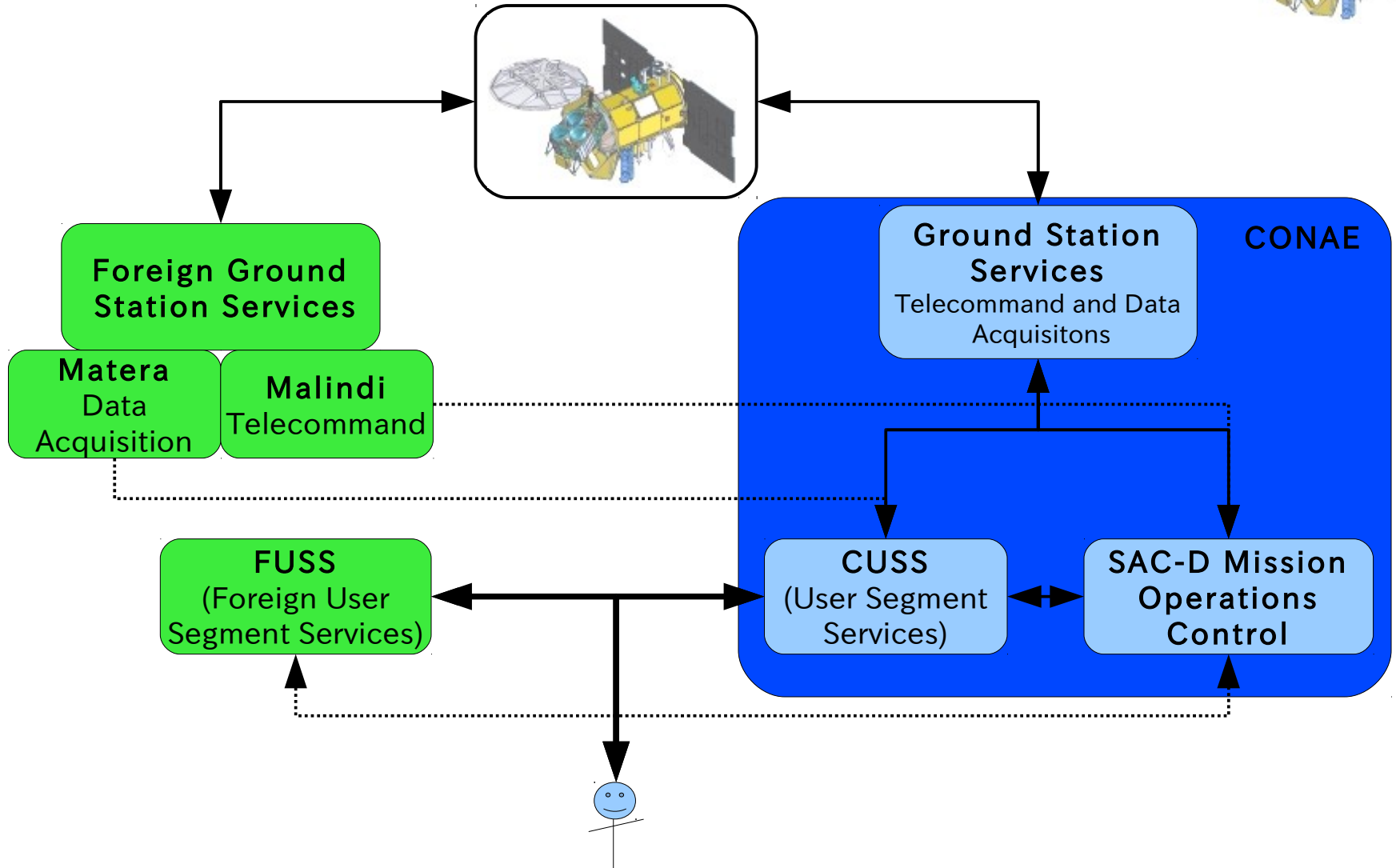


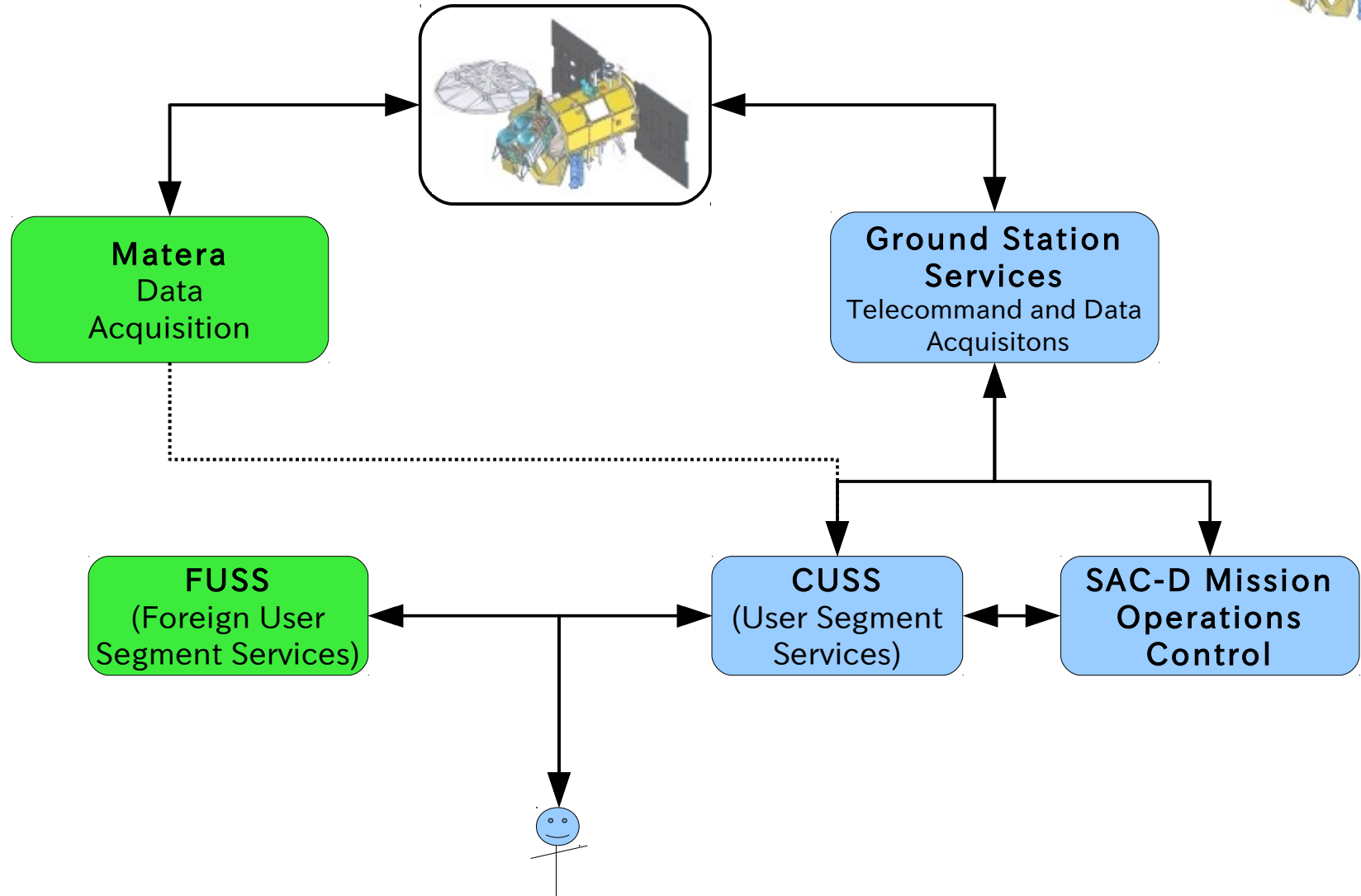


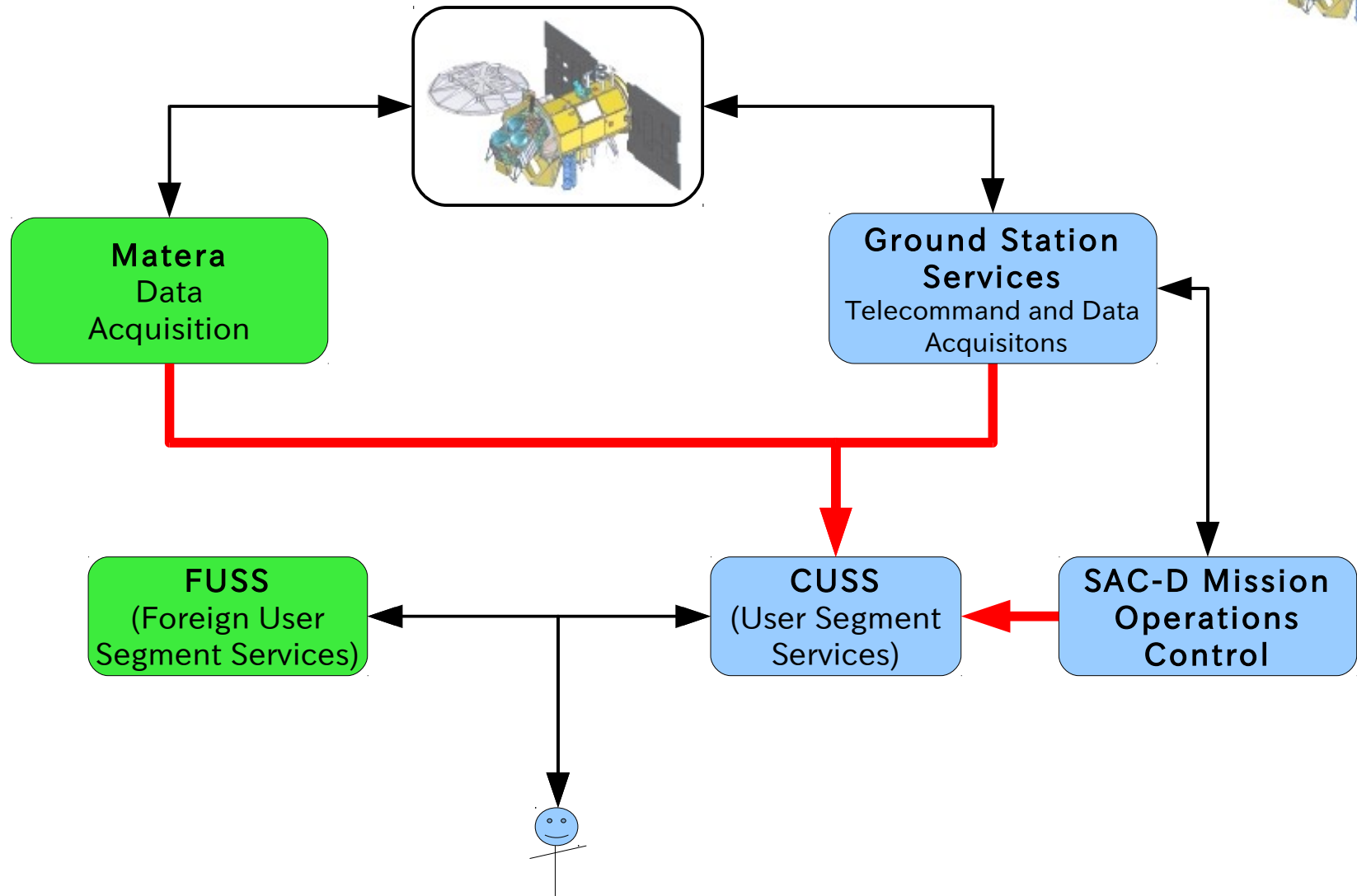
1. What the CUSS is
2. Relations between SAC-D and CUSS.
3. Services and Interfaces between SAC-D and CUSS
4. What the CUSS offers to SAC-D
5. Kind of Products
6. Kind of Users
7. Products and Users
8. Products offered and output format
9. Planning scheme
10. How to get the products
11. Instrument and Application Health Care

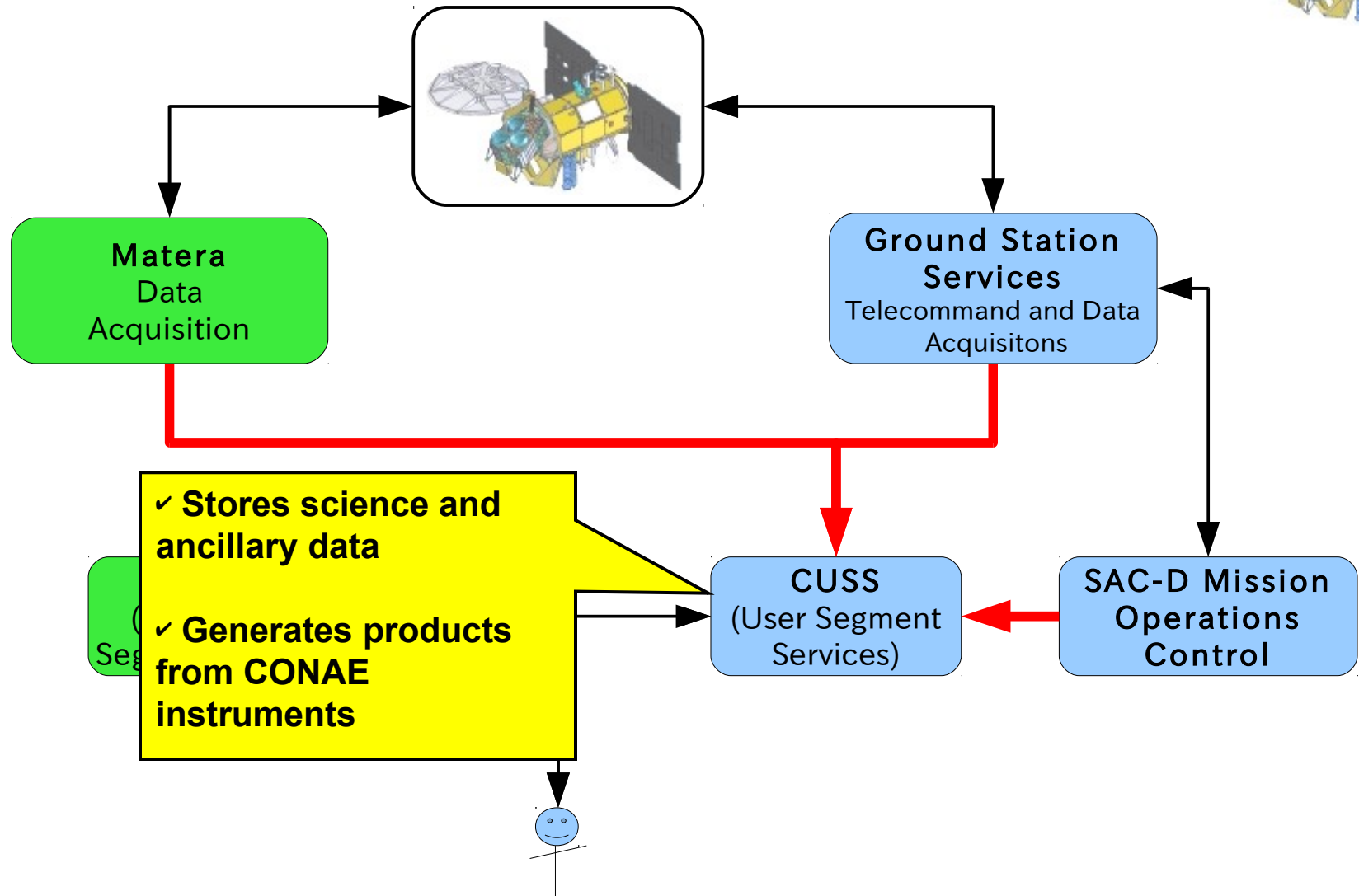


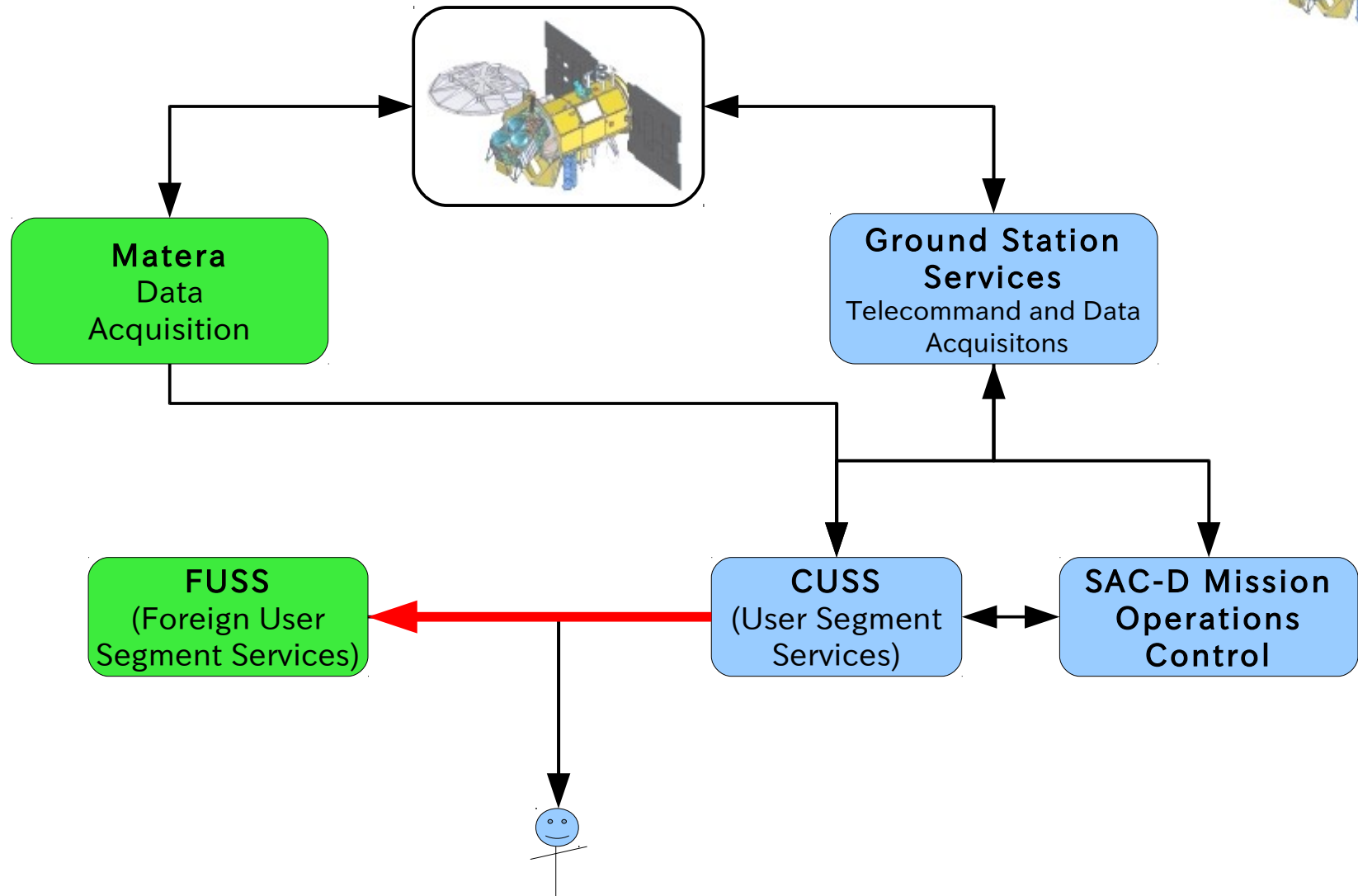


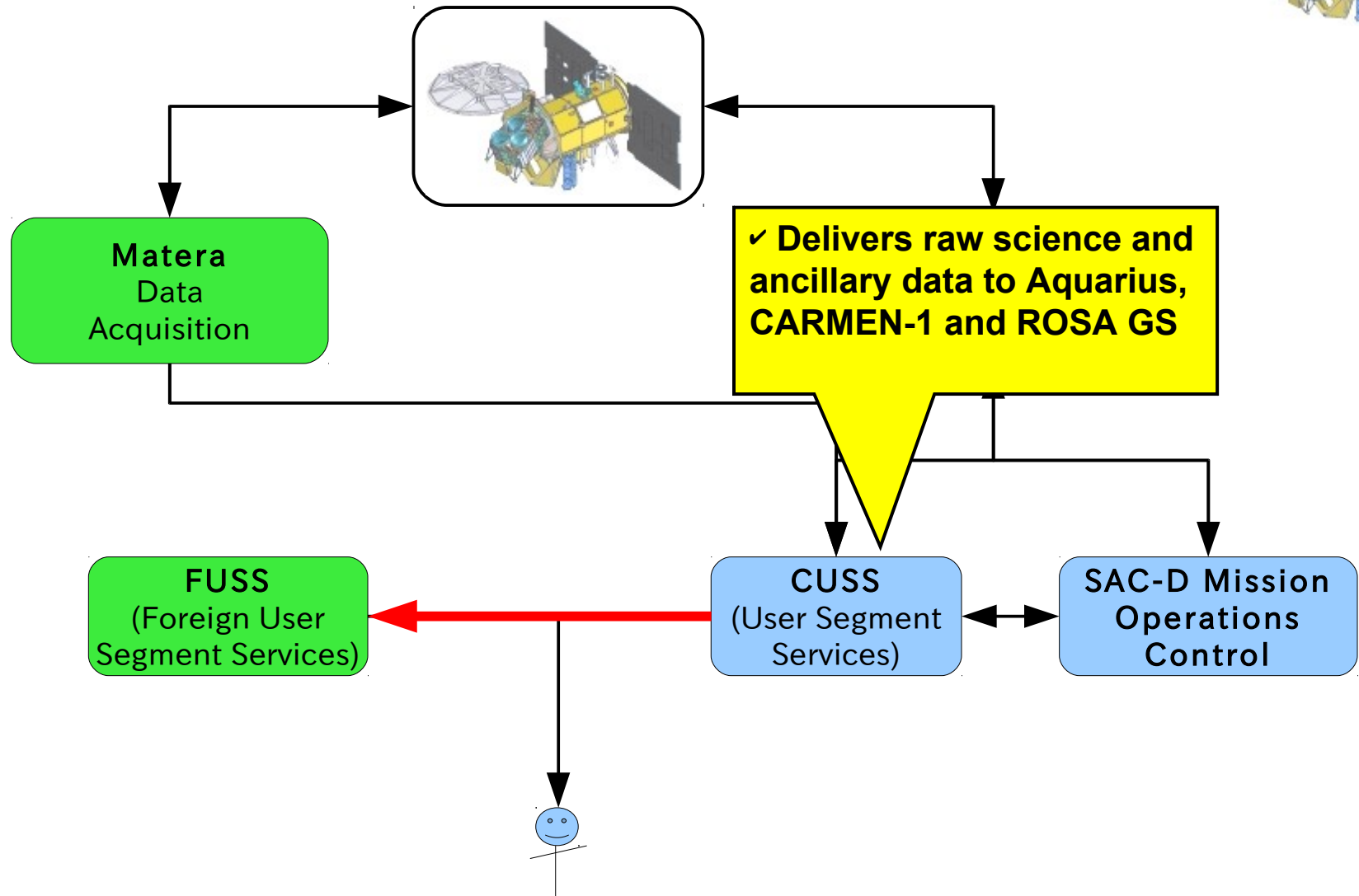
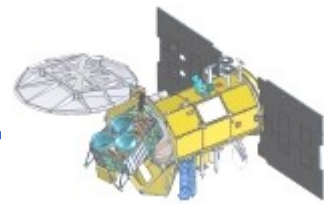


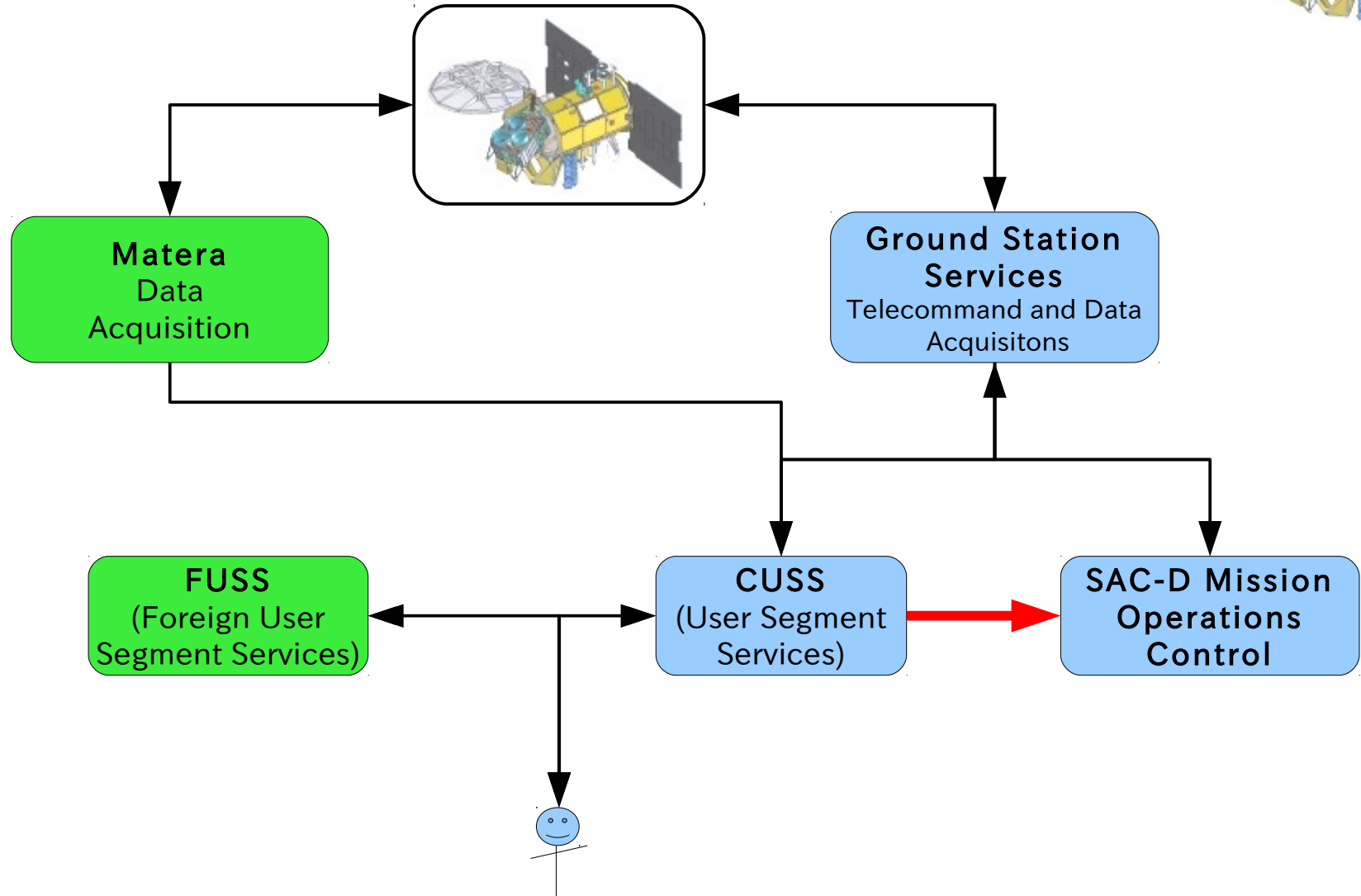


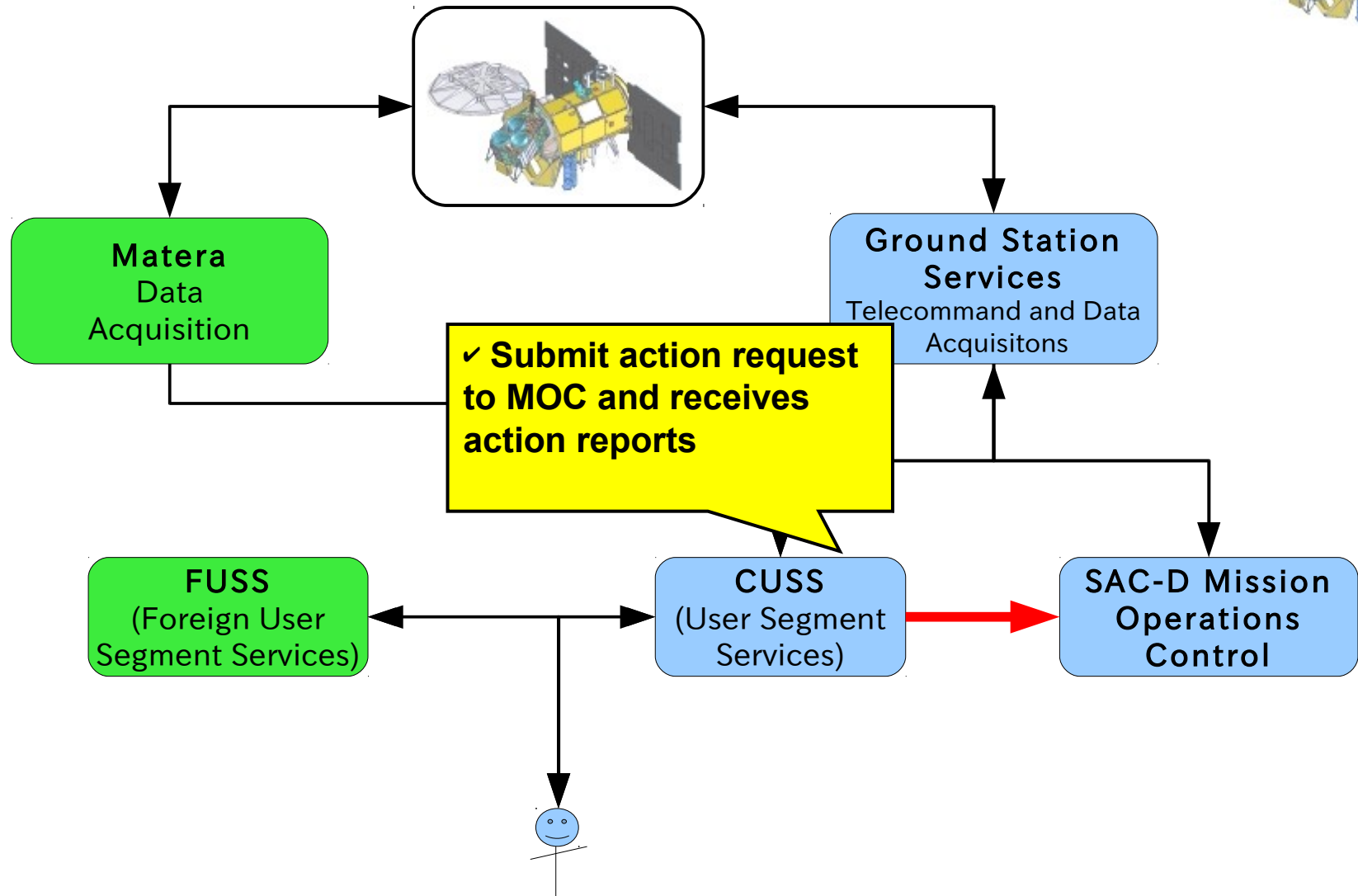


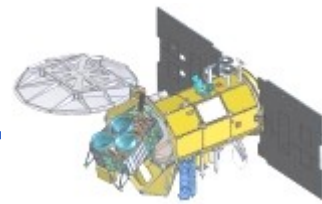












The services which CUSS offers to SAC-D Mission, are:

- **Planning** and **scheduling** acquisition plans
- **Send instructions** to SAC-D MOCC related to instruments
- **Generate products**
- **Store products**
- **Retrieve** and **store ancillary data** and **calibration parameters**
- **Catalog** and **delivery** Products



Emergency: related to emergency to prevent and to help people to confront disasters, in case of SAC-D the principal immediately application is related NIRST Fire Detection

Operative: products which are pre-configured end to end in all the steps; scheduling, acquiring, processing, storing and publishing.

Planning: products which are scheduled to be acquired and to be processed to the users and then are stored in databases

Stored: all products which have been acquired in any of the previous way explained.



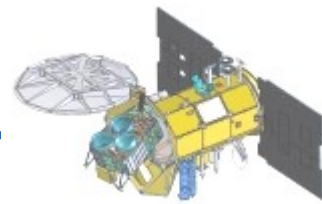
Emergency Users: groups or agencies who works to help and prevent disaster. They ask for products and images when those disaster happen. Civil Defense Agencies and other organization who uses those services when damage and injury are occurred

PI of the different Missions: group who defines the main requirements of missions.

Science Team: people who works from Opportunity Announcement

Common Users: anybody who ask for images and products





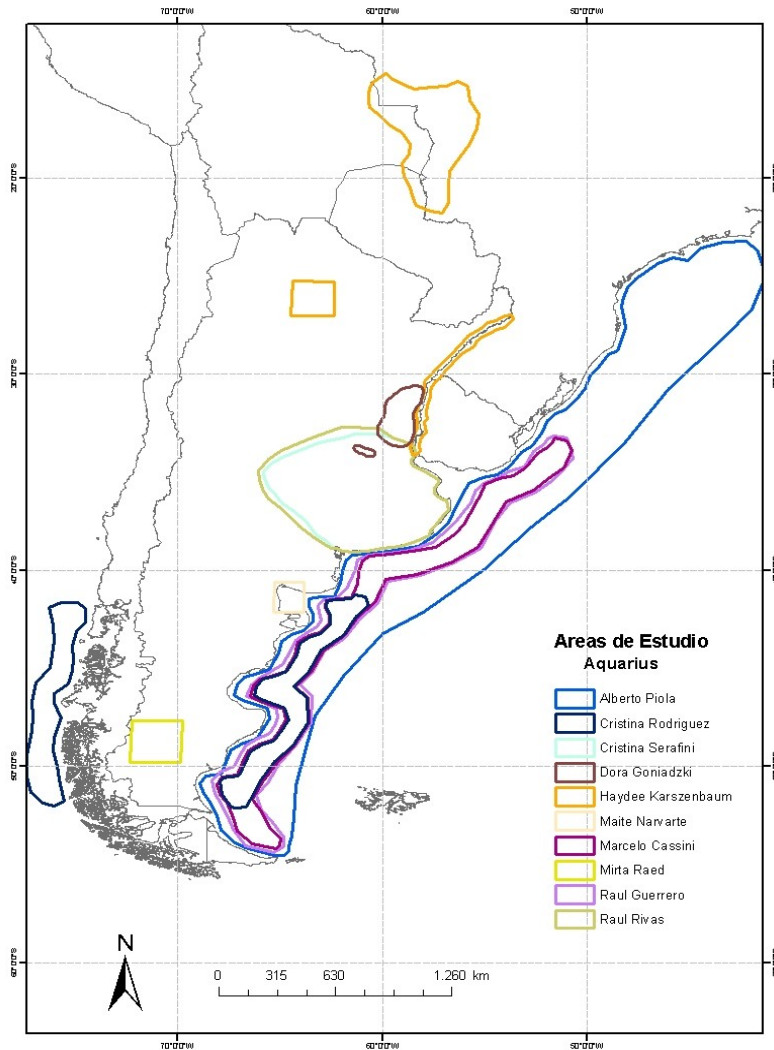
- each kind of user could ask for any kind of products
- the **priority** is the **emergency** situations
- the next priority is **to achieve the best usefulness**
- share and publishing those result

A good way to work is,

We should achieve the exactly definition of products with the **PI and Science Team** to configure **Operative Products** in a profile definition.

It is important because,

In this way we could prepare the **planning, reserve** the storage and **configure** the processors to carry out the **best results for the users**



FROM Opportunity Announcements:

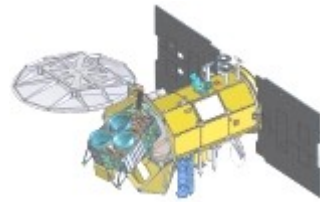
- Instruments to use
- Production Levels
- Defined Geographic Zone
- Frequency
- Coverage

+ Raw Data to Science Team

+ Level2 Products to PI and Science Team defined from Opportunity Announcements according each user profile

+ Level2 Products to common users depending on the user profile previously configured

+ Other Production Levels of each product:
To be defined



Output Format:

- XML data
- binary data
- HDF5
- geotiff
- other formats

Notes:

- In all cases we have an XML file as metadata enclosing the product
- The XML Files are self-contains of structure and data
- Always we can to export and convert XML to HDF5 depending on the kind of products
- Each specifically output format product will be generated depending on the requirements and definitions set by PI and Science Team
- Certain level of Image products like HSC are generated in geotiff format





MWR

- Water Vapor
- Cloud Liquid Water
- Rain Water

- Wind Speed
- Wind Direction
- Ice Concentration

NIRST

- Fire Mapping
- Hot Spots
- Fire Radiative Power
- Sea Surface Temperature
- Land Surface Temperature

HSC

- Volcanic Eruption
- Electronic Storm
- Fire Distribution
- Studies of urban light
- Snow Mapping
- Sea Surveillance - ship detection

DCS

- Level0 Products: binary product
not physical parameters
- Level1 Products: physical parameter



How is the planning scheme to Opportunity Announcements?

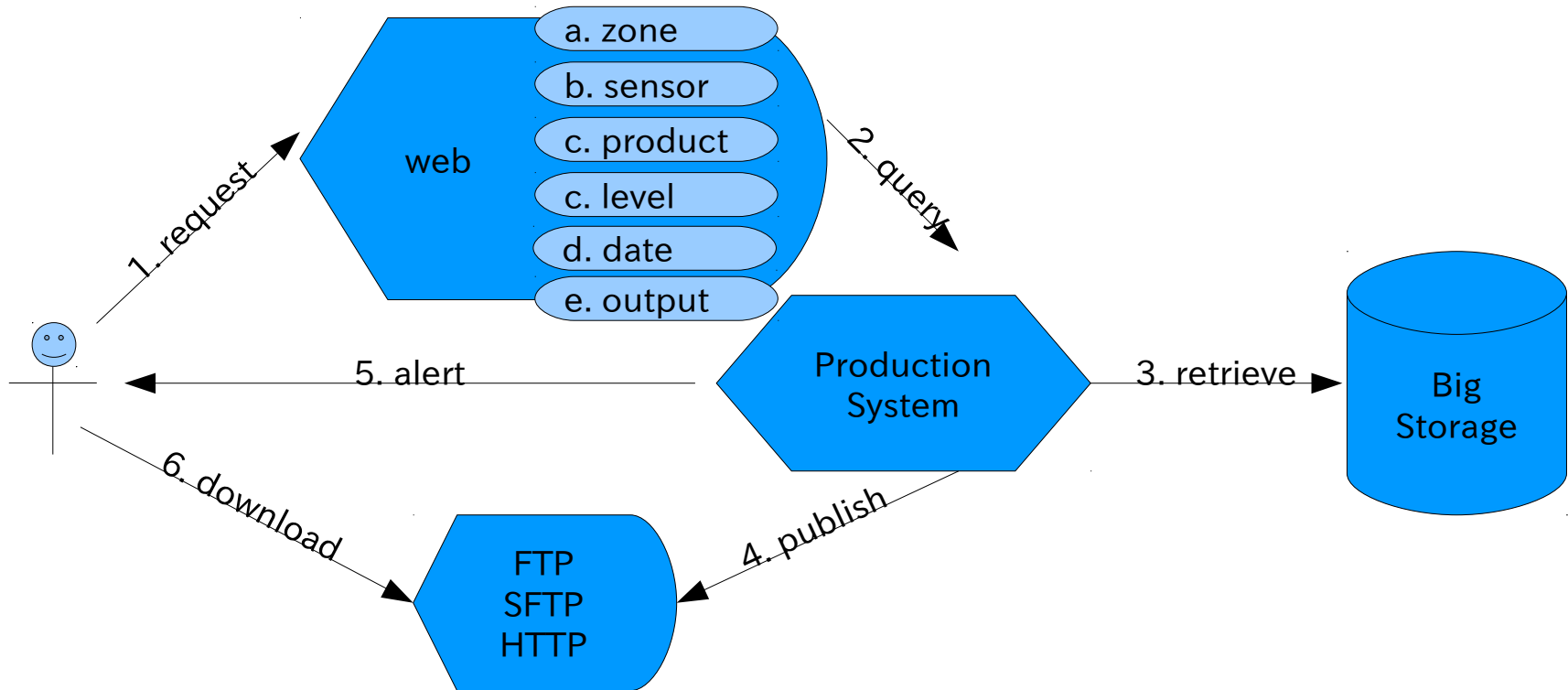
1. Principal Investigator defines the request previously and configure the profile to the user.
2. CUSS configures the planning from request and constraints trying to accomplishing all of OA. **operative products**
3. Along the mission PI could make changes if those doesn't affect the constraints.
4. PI defines the planning to the rest of mission to achieve the best use on instruments.

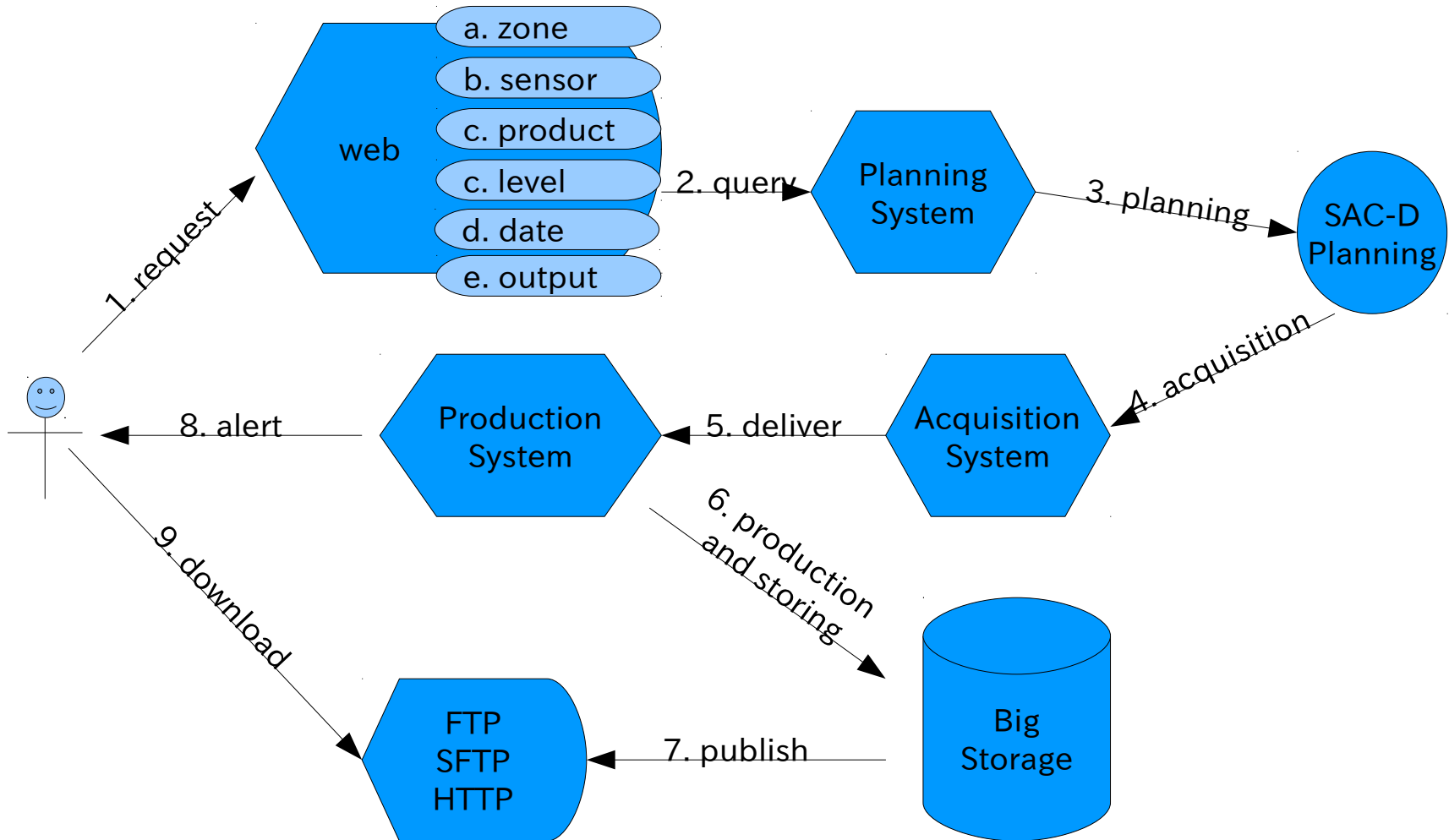
Planning Scheme for particularly acquisitions:

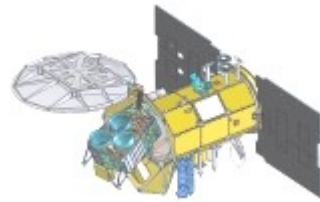
- **15 days before** to each request
- until **7 days before** could be confirmed or canceled
- **in emergency cases we have 48 hs to add** extra acquisition for emergency products like as NIRST case

Planning Team:

- 2 person + 1 backup working 8 hours during all week, 365 days per year on High Availability Scheme
- guard on-call every time for emergencies



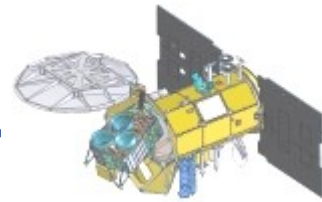




The IAHC is a team working inside the CUSS working to get the most instrument usefulness

To carry out their goals IAHC could:

- Request acquisition over pre-defined zones to get measures and perform calibrations
- Insert calibration packages to processors to enhanced the products
- Send software upgrades to CONAE Instruments
- The IAHC should have direct contact to PI and work together to achieve the best results. This provide an special channel to ask for specifically request over instruments



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Thank you!

