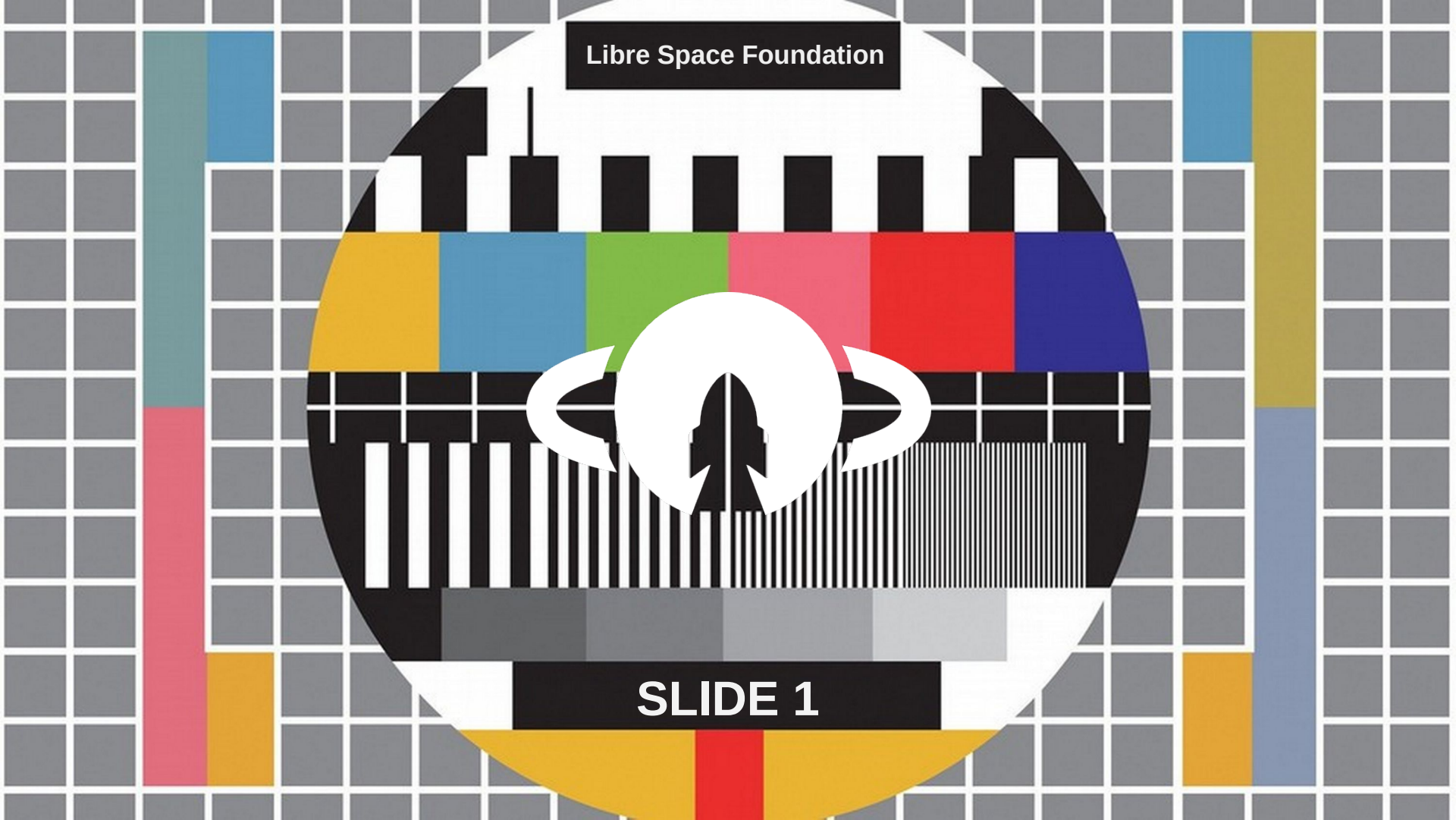
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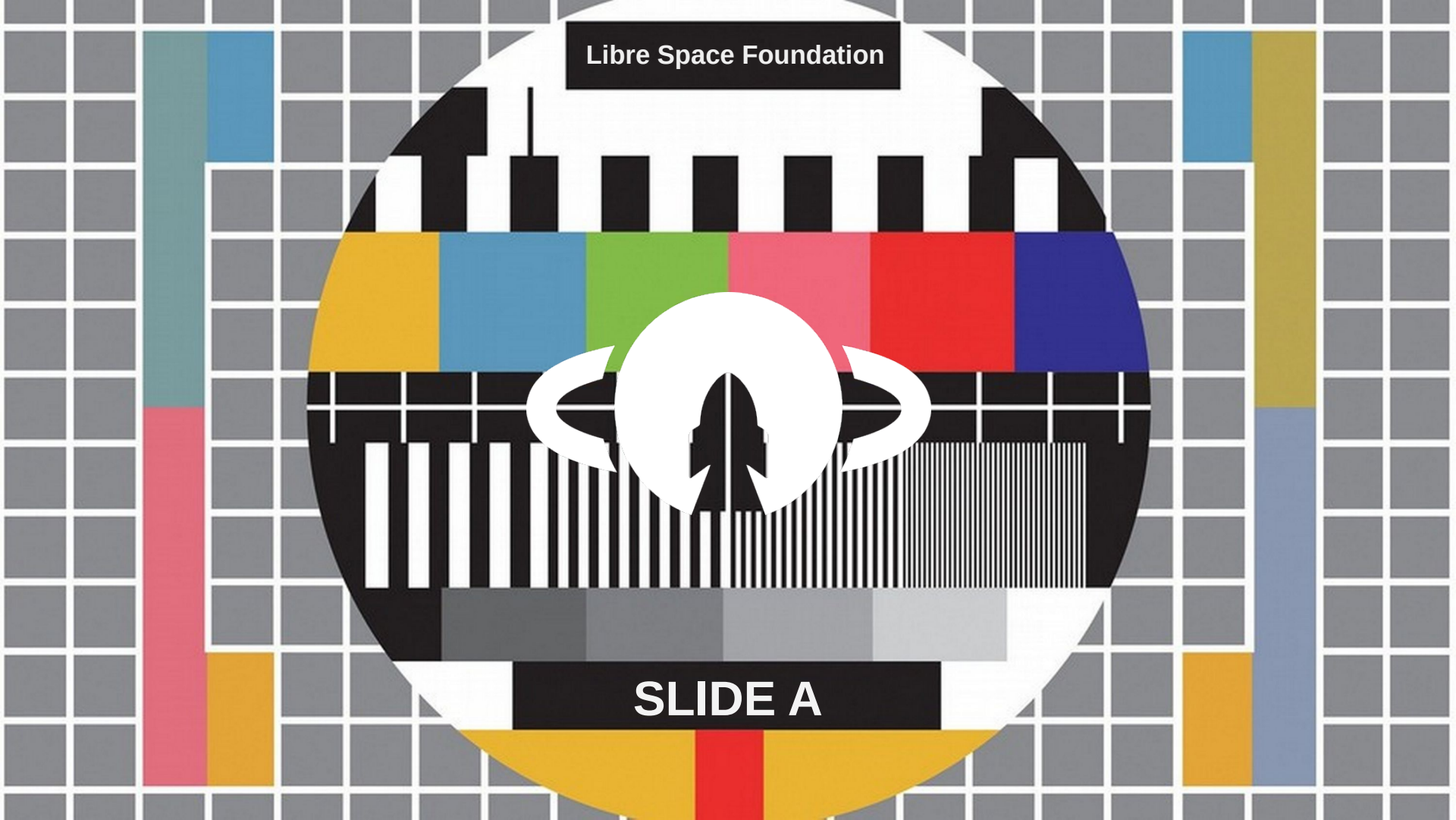
SLIDE 1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SLIDE A

SatNOGS SSA/SST Operations

by Alfredos (fredy) Damkalis

Gathering Information Phase
T-3 months to T+3 weeks

Gathering Information Phase

Tasks:

- Gathering info about satellite missions and their transmissions
- Create and review satellite and transmissions entries in SatNOGS DB related to the launch
- Assign temporary NORAD IDs to satellites (for compatibility reasons)
- Prepare and testing end to end support for missions upon request by satellite team
- Create decoders for satellite data and build dashboards for visualizing these data
- Create a community forum thread about the launch for coordinating information gathering

Gathering Information Phase

Type of info:

- Launch datetime
- Number of satellites
- Deployment datetime per satellite
- Details on satellite teams/missions
- Transmissions parameters per satellite
- Decoding details of satellite data
- Satellite teams/missions communication channels

Gathering Information Phase

Sources:

- Satellite teams official requests to be supported by SatNOGS
- Launch provider online resources
- Satellite missions online resources
- Organizations online resources
  - ITU
  - FCC
  - IARU
- Other online resources
  - Forums, sites, social media etc
- Previous missions by the same satellite team

Gathering Information Phase
T-3 months to T+3 weeks

Pre-launch Phase
T-1 day

Pre-Launch Phase

Tasks:

- Acquire/Create orbital data
- Prepare SatNOGS operators working environment
- Inform spectrum observers about the band ranges that we intent to track in order to initiate spectrum observations
- Inform and organize observations reviewers and 3rd party observers for the final list of satellites that are going to be tracked
- Ensure SatNOGS operators will be available for operations tasks a couple of hours before launch and at least 12h after launch

Gathering Information Phase
T-3 months to T+3 weeks

Pre-launch Phase
T-1 day

Scheduling observations Phase
T-01:00:00

Scheduling Observations Phase

Tasks:

- Scheduling observations by utilizing SatNOGS Network resources for the first 12h after launch
- Ensure that scheduling distributes fairly all the passes among tracked satellites by respecting Network stations owners limitations and choices

Gathering Information Phase
T-3 months to T+3 weeks

Pre-launch Phase
T-1 day

Scheduling observations Phase
T-01:00:00

Launch Phase
T+00:00:00

Launch Phase

Tasks:

- Verify launch datetime from online resources or satellite teams
- In case of changed launch datetime
  - Update orbital data
  - If necessary (more than 1m difference) re-schedule observations for the first 12h
- In case of postponed launch removing scheduled observations
- Update the launch thread in community forum

Gathering Information Phase
T-3 months to T+3 weeks

Pre-launch Phase
T-1 day

Scheduling observations Phase
T-01:00:00

Launch Phase
T+00:00:00

Post Launch/Tracking Phase
T+00:00:01 to T+days/weeks

Post Launch/Tracking Phase

Tasks:

- Review observations results
- If necessary generate updated orbital data based on Network or spectrum observations
- Schedule future observations at most for the next 48h
- Watch communication channels of launch provider and satellite teams/missions for updates and communicate if necessary with them
- Update the launch thread with the latest info (satellites status changes, new orbital data etc)
- Update/Create if necessary SatNOGS DB with new satellite or transmitter entries

Gathering Information Phase
T-3 months to T+3 weeks

Pre-launch Phase
T-1 day

Scheduling observations Phase
T-01:00:00

Launch Phase
T+00:00:00

Post Launch/Tracking Phase
T+00:00:01 to T+days/weeks

Identification phase
T+days/weeks to T+months

Identification Phase

Aka TLE lottery:

- Two sub-phases:
  - Published orbital data (NORAD ID) but not final assignment on objects
  - Orbital data assigned on objects, usually one to two days after publication
- Final identification should happen in the second sub-phase after expected objects have been cataloged
- Identification process can start on the first sub-phase but it should verified again in the second sub-phase due to possible changes

Identification Phase

Tasks:

- Making sure that all objects are cataloged, if any missing the finalization of identification should be postponed
- Compare published orbital data against Network's and spectrum observations for finding possible candidates for tracked satellites until only one remain and complete identification.
- Update satellite entries to follow one of the possible candidates, if necessary with random/semi-random choice.
- Update the launch thread with the latest info (possible candidates or final identification per satellite)
- Inform Satellite teams and 18th SDS (who has published the orbital data) for final identifications.

After Identification Phase

- Actively tracking is stopped by the operations team
- Station owners (SatNOGS Network observers) and 3rd party observers continue to track the satellites
- Satellite teams are encouraged to share updates with observers about their mission progress in order to keep them engaged
- Satellite teams are encouraged to join SatNOGS Network with a station and keep scheduling their own and other satellites
- Operations team is available to restart tracking, after team's request or in other circumstances, usually emergencies
- Operations team may track actively the re-entry of a satellite

SatNOGS – Join us!

Web Sites: https://satnogs.org & https://libre.space
Wiki: https://wiki.satnogs.org
Community Forum: https://community.libre.space
Repos: https://gitlab.com/librespacefoundation/satnogs

Contact me: fredy@libre.space

Thank you!