

# LSIC E&C Focus Group Monthly Meeting Launch of E&C Subgroups

Jibu Abraham & Sarah Hasnain  
August 24<sup>th</sup>, 2022



# Agenda

- Opening Remarks – Athonu Chatterjee
- Data Buy Survey – Ben Bussey
- Introduction to Subgroups – Jibu Abraham and Sarah Hasnain
- Meet the Subgroup Leads
- Confluence Resources
- Subgroup Breakouts – Intros + Start building Subgroup vision and activity goals



# Community Interest in Data Buys





# LSII | Data Buys

- NASA is interested to learn more about the interest in the LSIC community of NASA conducting data buys from commercial providers
- There are two types of data to consider
  - Data acquired as a by product of landing on the Moon
  - Dedicated data that require a specific instrument to be flown
- What kind of data access is required?
  - Does NASA buy an entire data set and put it in PDS?
  - Do users buy data directly from the providers?

# LSII | By-Product Data

- Data acquired as a by product of landing on the Moon
  - Environmental Data
    - Radiation, thermal, illumination, dust, volatiles
  - Descent & Landing Imagery
    - Images of terrain during descent, surface panorama after landing
  - Landing & Post-landing effects
    - Plume/surface interactions
  - Technology/System Performance
    - Navigation performance, comm performance, landing precision, hazard detection and avoidance
- Are there additional data sets you would want?
- Are there data sets the lander will naturally acquire, but perhaps you need a variation of those data, e.g. a certain data set to be acquired at a higher cadence?

# LSII | New Data Sets

- What data would enhance your ability to plan lunar surface operations?
- Data sets that require a dedicated instrument to be flown
  - E.g. New topography, or mineral map data sets
  - Could be either an orbital or surface data set
- Monitoring Data for Situational Awareness
  - Rover locations and movement
  - Charging operations
  - Search and Rescue for lost rovers
  - Comm quality/performance

# LSII | General thoughts/questions

- Are there any Data privacy, Intellectual Property or Distribution Concerns
- Are these data global or regional in nature?
- Is there a different financial value for different data qualities, e.g. spatial or spectral resolution?
- What does this data set enable?
- How do you put a value on a data set (financial or otherwise)?
- What is the value of this data set to your LSIC/STMD/ESDMD, etc. mission?
- If you are a potential provider, what level of funding, if successful, is required for you to consider acquiring these data?
- Is the data you want a one-time acquisition? Every landing?
- Do you need it only for a particular region

# LSII | Our Survey Says.....

<https://forms.gle/tuhzwAUaQLDivQ2D7>





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# Introduction to Subgroups

## Why Subgroups?

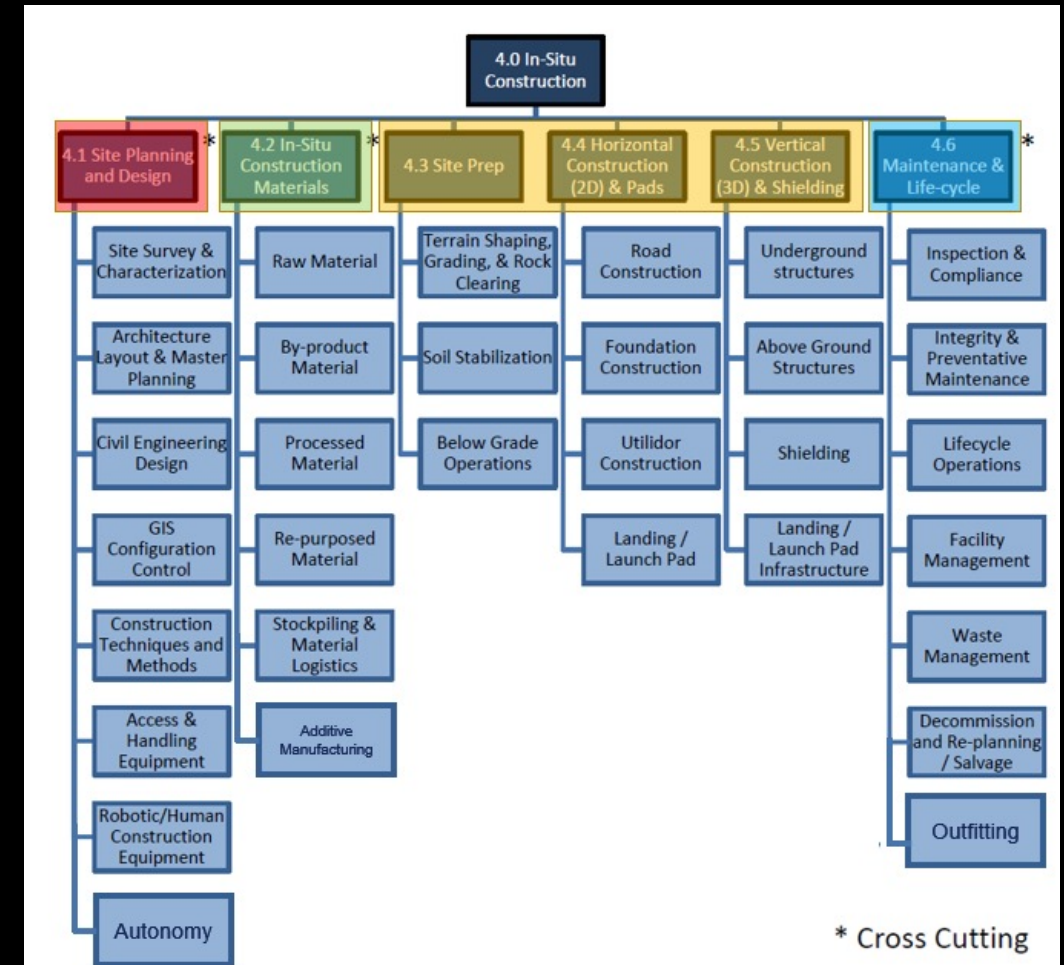
What this new opportunity means for the LSIC E&C Community

- We heard your feedback:
  - RE: E&C FG Survey led by Reeve Heinis via sli.do
  - Participants are looking for opportunities for purposeful networking and finding new collaborators
  - 50% of participants said that they would like to collaborate on a technical deep dive
  - The monthly meetings are great for awareness and folks would like more granular discourse
- We want to create more opportunities to make this happen: via Subgroup Meetings + Corresponding Confluence pages



# Subgroup Breakdown

- **Subgroup #1 – Autonomy & Site Planning (WBS 4.1)**
  - Dr. Alhassan Yasin (APL)
  - Sarah Hasnain (APL Co-Lead)
  
- **Subgroup #2– Additive Manufacturing, Raw Materials (WBS 4.2)**
  - Dr. Nilanjan Mitra (Johns Hopkins HEMI)
  - Dr. Michael Nord (APL Co-Lead)
  
- **Subgroup #3 – Site Prep, Horizontal & Vertical Construction (WBS 4.3, 4.4 & 4.5)**
  - Roberto de Moraes (AECOM)
  - Jibu Abraham (APL Co-Lead)
  
- **Subgroup #4 – Outfitting & Maintenance (WBS 4.6)**
  - Miguel Coto Villanueva (Herrero Builders)
  - Dr. Athonu Chatterjee (APL Co-Lead)



State of ISRU Construction at NASA, Mueller, 2020

# Subgroup Logistics, Norms, and Expectations

- When/Where: Subgroup meetings (30 mins) take place immediately following E&C Focus Group Monthly Meeting via Zoom breakout.
- Meeting notes are taken and shared on the corresponding Subgroup page on Confluence:
  - <https://lsic-wiki.jhuapl.edu/pages/viewpage.action?pageId=19038506>.
  - If you need access to Confluence, please email Andrea Harman: [ams573@ALUMNI.PSU.EDU](mailto:ams573@ALUMNI.PSU.EDU)
- Interested LSIC E&C members are welcome to participate – Prior experience in the Subgroup domain (outfitting / autonomy / etc.) is *not* required to join a Subgroup.
- Acronyms
- Please err of the side of communication

# Meet the Subgroup Leads



# Confluence Resources

# Confluence Resources

The screenshot shows a Confluence page for the 'Excavation & Construction' group. The page title is 'Excavation & Construction Home', created by Andrea Harman and last modified by Sarah Hasnain on Aug 05, 2022. The page content includes a section for 'Excavation & Construction' with a paragraph describing the LSIC E&C Focus Group's mission to assist NASA in evaluating technologies for lunar surface construction. It lists various infrastructure elements like landing pads, habitats, roads, and power infrastructure. A 'Goals' section follows, stating the group's objectives are to identify challenges and explore current technologies for sustaining a human lunar presence. On the right side of the page, there is a 'Who's Who in E&C' section with a link to view or contribute details, and a 'Return to LSIC Home' link above an image of a lunar habitat and rover. The left sidebar shows a 'PAGE TREE' with links to 'E&C Conversations', 'E&C Subgroups', 'E&C Monthly Meeting', 'E&C Resource Library', 'Who's Who in E&C', 'Suggestions for E&C-related CLPS activities', 'E&C Workshop', 'Interactions with Other Focus Groups', 'E&C Webpage Content', and 'Year 1 Accomplishments'. The top right of the page has action buttons for 'Edit', 'Saved for later', 'Watching', and 'Share'.

- Confluence Tutorial (Practice editing a page, commenting, etc.): <https://lsic-wiki.jhuapl.edu/display/ds>
- If you need access to Confluence, please email Andrea Harman: [ams573@ALUMNI.PSU.EDU](mailto:ams573@ALUMNI.PSU.EDU)



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