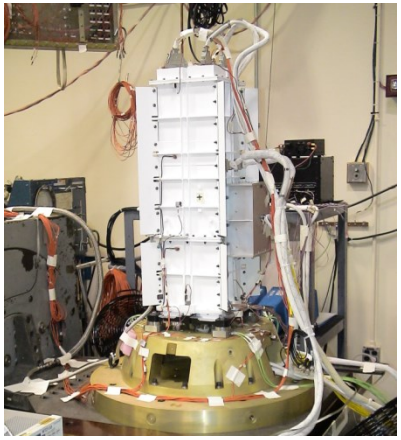
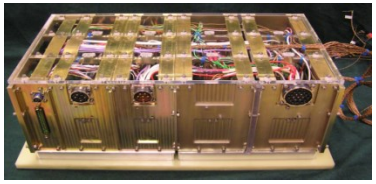
Technology Roadmap Status







Small Bodies Assessment Group

June 29 – July 1, 2015

Washington D.C.

Information presented for discussion purposes only.

Technology Roadmap Charter

- SBAG roadmap will include high-priority technology needs that support any/all SBAG goals.
  - Science, Exploration and Planetary Defense
- SBAG will identify ongoing relevant technology investments occurring within NASA.
- SBAG will identify baseline capabilities.
- SBAG will Identify the technology drivers and common needs for likely future missions.
- SBAG will provide a recommendation for balance between near-term technology and those for the following decade.
- SBAG will provide a recommendation for balance between technologies targeting competed missions and the Cryogenic Sample Return.
- SBAG will provide a recommendation for prioritization of subsystem technologies.

Recommendations are limited to spacecraft systems and subsystems, instrument capabilities and sample collection, verification, encapsulation, and return technologies.

- No specific science instrument advocacy
- No facilities, curation processes, or simulant development

The product will be a living document to inform coordination of STMD, HEOMD and PSD/SMD investments of SBAG relevant technology needs.

Technology Roadmap Scope

- High-priority technology needs that support any/all SBAG goals
- Requested to limit document to 20 pages total
- Include “mission pull” recommendations based on preliminary science objectives and exploration strategic knowledge gaps
- Include general bus technologies for traditional Discovery and New Frontiers missions, sample return technologies and small spacecraft technologies
- Include SOA capabilities
  - Include identification of technology gaps from SOA
  - Include identification of specific SBAG gaps from ongoing NASA investment objectives
- Avoid identifying a solution by only one institute over another
- Avoid any specific instrument development
- The development plans / schedules unless specifically requested on a per technology basis and is otherwise out of scope.

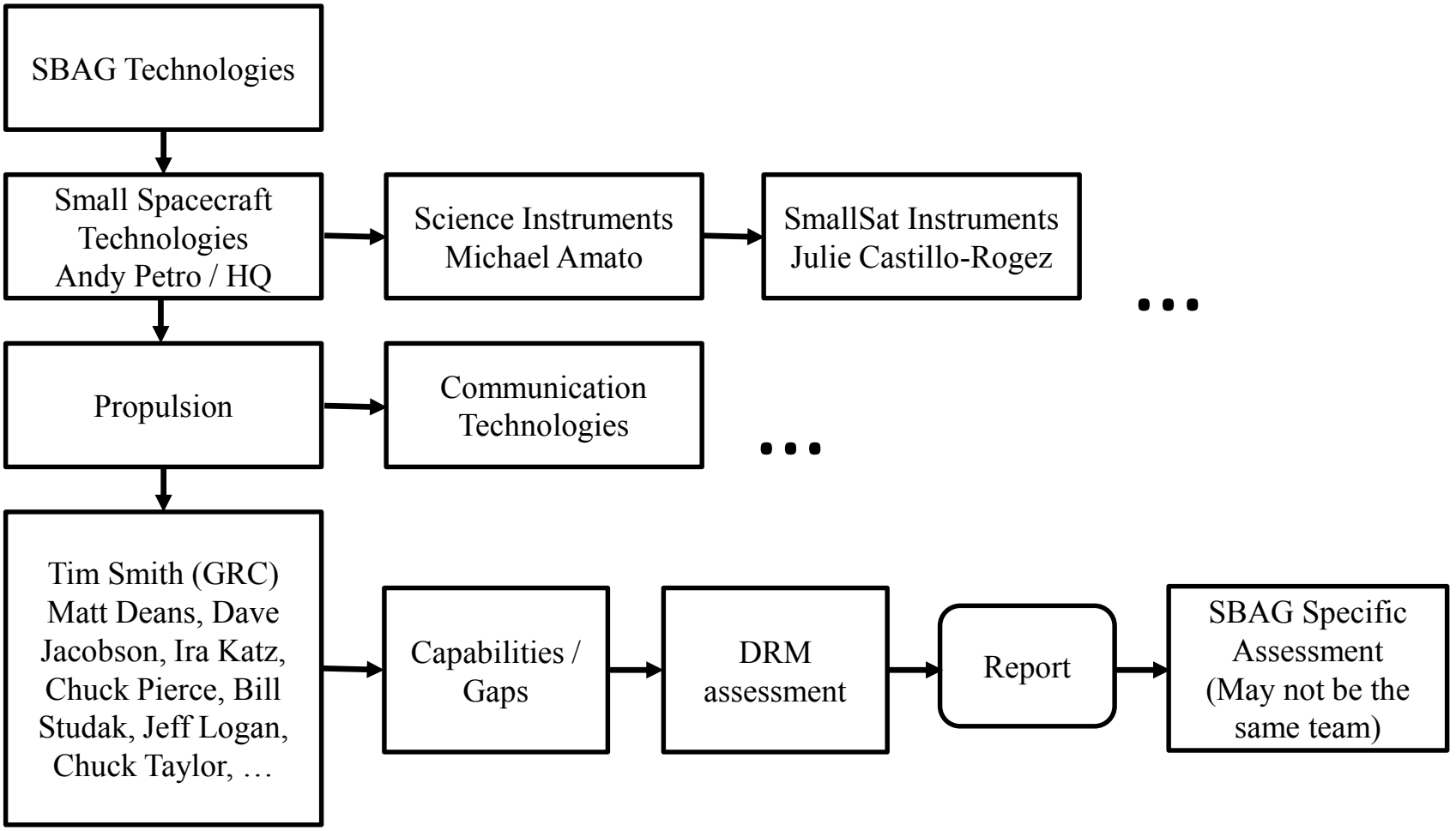
The product will be a living document to inform coordination of STMD, HEOMD and PSD/SMD investments of SBAG relevant technology needs.

Update Approach / Schedule

- Present Technology Status / Subset of Progress Since Last Roadmap – January 7, 2015
- Propose Charter / Scope and ask for community participation – January – February
- Establish community teams for categories of technologies - January – February
  - Standard Bus Technologies – NASA STMD Roadmpas
  - Sample Return Technologies – Rob Gold / APL Decadal Survey Report / CAPTEM Report
  - Small Spacecraft Technology – STMD / Andy Petro, NASA HQ to lead coordination
  - Instrument Technologies – Michael Amato (General), Julie Castillo-Rogez (SmallSat)
- Establish SOA Capabilities (February – June) – Present at SBAG 13
  - Survey STMD, HEOMD, SMD programs, NASA investments and SBIR leads
  - **Draft Science Objectives to be presented at SBAG 13**
- Tie to mission needs and existing programs (July – November)
  - Identify gaps between technology needs to meet science objectives
  - Identify gaps between SBAG needs and ongoing capability push efforts
- Provide a draft technology roadmap for community feedback – December, 2015
- Present draft technology roadmap for community feedback – January, 2016
- Provide a new baseline of the roadmap to the community – March, 2016

The approach is to develop a community based and mission need driven technology roadmap by Spring of 2016.

Example Area – Small Spacecraft / Propulsion



Technology discipline experts for wide range of working groups.

Summary

- The first phase of the technology roadmap is concluding
  - A survey of technology development activities and SOA capabilities documentation
    - All documents to be posted on the SBAG website
  - A survey of instruments SOA capabilities and near-term performance expected

- The SBAG Technology Roadmap will be updated based on the draft science roadmap:
  - Late December: Draft document posted to SBAG website
  - January (SBAG 14): Discuss the draft roadmap
  - February: Finalize / incorporate comments and post document
  - Update to be coordinated across SMD, HEOMD and STMD

- Community support and inputs are greatly appreciated

Contacts

If you are interested in supporting the SBAG technology roadmap activity, please contact:

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Documents to all be posted for community feedback / participation:
http://www.lpi.usra.edu/sbag/goals/