



CII Guidelines Update to Rev A

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Guidelines Purpose



- Provide a prospective Instrument Developer with technical recommendations to help them design an Instrument that may be flown in LEO or GEO.
- Ensure maximum compatibility with Earth-orbiting satellite market, leading to increased likelihood of successful Instrument to HPO pairing
- Do not levy requirements
- Do not establish hard thresholds



Revision A



National Aeronautics and
Space Administration



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Version: Rev A Draft

Common Instrument Interface Project

Hosted Payload Guidelines Document

Earth System Science Pathfinder Program Office
NASA Langley Research Center
Hampton, VA 23681

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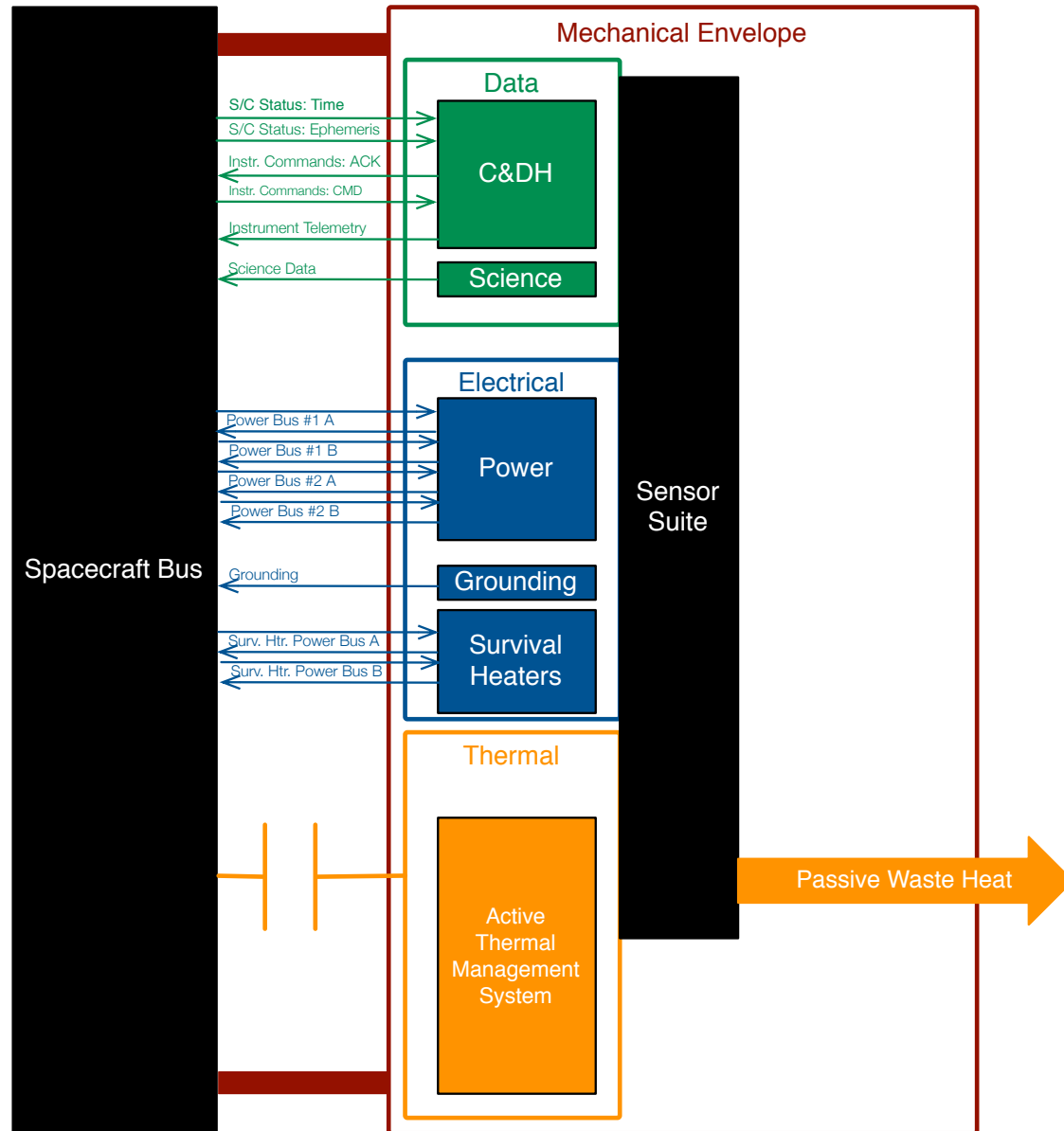
Revision A Goals



- Provide more explicit definition of guideline scope and technical components
- Incorporate technical content for GEO domain
- Reduce design constraints on Instrument Developer



Guidelines Scope





5 Scope Technical Components (1 of 2)



- Hierarchical Guideline Levels
 - Level 1 and Level 2
 - Lower levels either removed or captured in Best Practices (not credible given hosted payload model)
- Guideline Flavors
 - Interface guidelines: direct interactions between Instrument and Host Spacecraft
 - Accommodation guidelines: constraints on resources and services Instrument expected to draw from Host Spacecraft



5 Scope Technical Components (2 of 2)



- Reference Material / Best Practices
 - Additional technical information
 - Not prescriptive
- Assumptions: expected characteristics and behavior of Host Spacecraft and/or industry partners
- Negotiated Parameters: agreements among Instrument Developer and industry partners



New Content



- Hosted Payload Worldview: “Do No Harm”
- GEO Domain
 - Hosted Payload on Commercial Communications Satellite
 - Request for Information for Geostationary Earth Orbit Hosted Payload Opportunities and Accommodations (March 2012)
 - Industry Visits (September-October 2012)



New Content



- **Explicit Environments**
 - Shipping/Storage
 - Integration and Test
 - Launch
 - Operational
- **Contamination**
 - Instrument Generated
 - Externally Generated
- **Hosted Payload Concept of Operations**



Modified Content



- Content Moved to Appendix
 - Instrument Modes
 - Software and Electronic Ground Support Equipment Guidelines
 - Model Guidelines & Submittal Details
- Content Removed: Coordinate Reference Frames



Standardized Nomenclature



- Parties involved in hosted payload arrangement
 - Instrument Developer
 - Host Spacecraft
 - Host Spacecraft Manufacturer
 - Satellite Operator
 - Systems Integrator
- Verbs
 - Should: Guidelines
 - Will: Assumptions and Negotiated Parameters



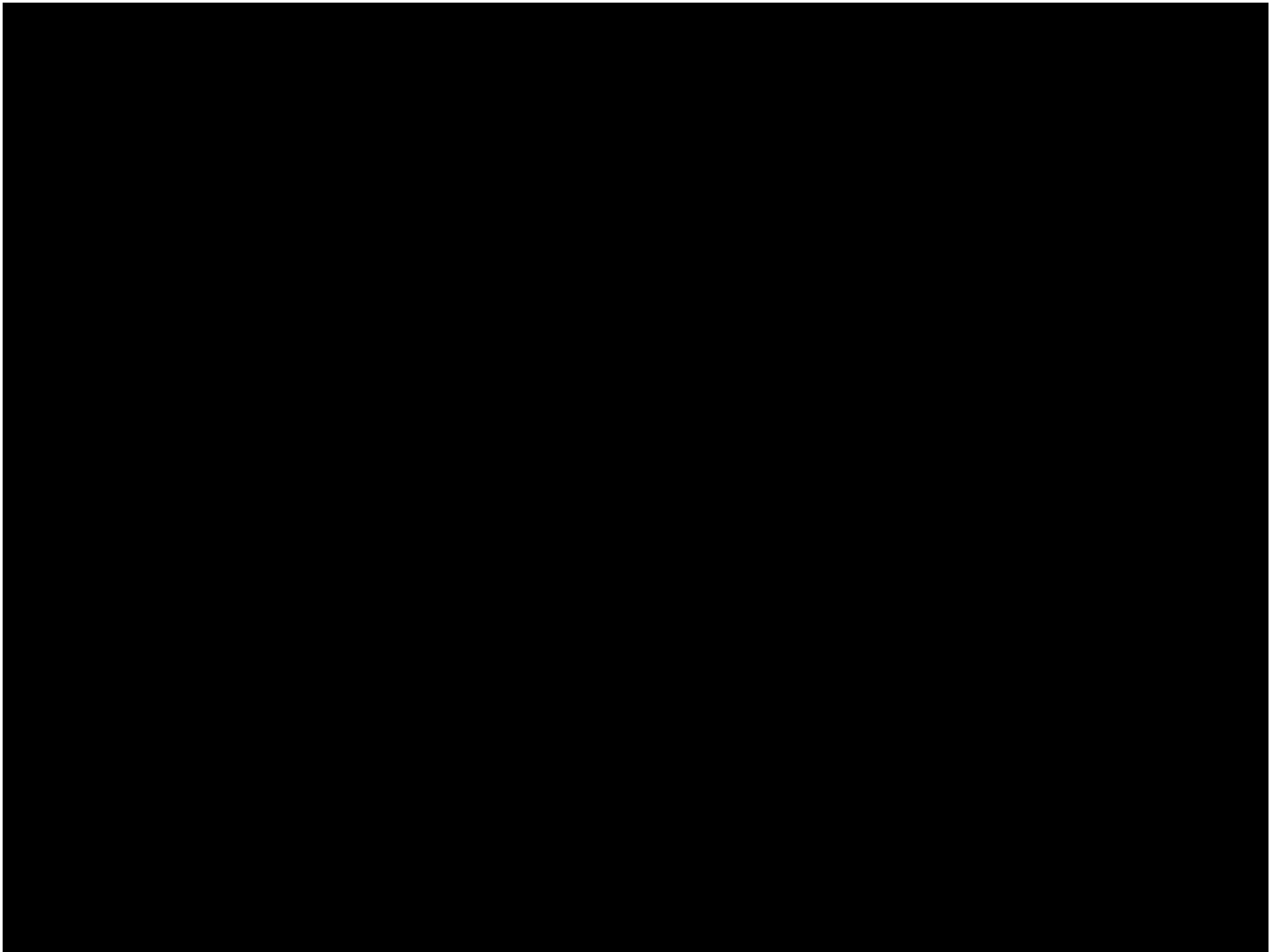
Guideline Characteristics



- Syntax
 - Statement
 - **“The Instrument should [verb] ...”** (guideline)
 - **“The Host Spacecraft will ...”** (assumption)
 - **“The Mechanical Interface Control Document [MICD] will document ...”** (negotiated agreement)
 - Rationale
- Traceable
- Verifiable
- Active Voice



QUESTIONS / DISCUSSION





Guideline Development Timeline



- November 2011: Baseline Approved
- December 2012: Draft Rev A Released
- January-February 2013: Industry / Peer Review
- Spring 2013: Expected Rev A Approval