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PDR Requirements Matrix

	PDR Item - Requirement	Information Requested to Meet Requirements
1	Demonstrate that the LDCM architecture and design meets all system requirements with defined risk levels.	A presentation of the design and interfaces by means of block diagrams, signal flow diagrams, schematics, logic diagrams, error budgets, link margins, initial interface circuits, packaging plans, configuration and layout sketches
2	Discuss the maturity of operational concepts (including servicing of International Cooperators, if applicable),	Coherent, complete ops con for satellite operations, LDCM data flow (including scheduling), and business.
3	Summarize any vendor PDRs that may have been conducted below the systems level	List and summarize results of any other PDRs held
4	Summarize requirements allocations to systems and subsystems, and analyses	Requirements Traceability Matrix to subsystem level
5	Demonstrate risk management has been integrated into the design and development activities, and prioritized risk areas have mitigation approaches defined.	Identify current risks and mitigation plans, and how previously identified risks have been addressed or mitigated by the system design.
6	Demonstrate that internal and external interfaces are identified and understood.	Identification of all interfaces and status of IRDs/ICDs, interface requirements. Status of margins at any external interface should be provided (ie throughput)
7	Overall, demonstrate that the system architecture, designs, and operations concepts have been validated by enough technical analysis and design work to establish a credible, feasible design that can support government and commercial (if applicable) data and data product requirements	System Performance budgets, analyses, modeling and any early results are required. Estimates of weight, power, volume and the basis for the estimates of these parameters are required. Supporting data and analyses for mechanical, power, thermal, and electronic design: load, stress, margins, reliability assessments, should be shown . Software requirements, design, structure, logic flow diagrams, Central Processing Unit (CPU) loading, design language and development systems need to be specified (NASA will provide templates for Mass/Power/Data Rate/and other performance values showing expected growth and margins.)
8	Provide a baseline design that can be readily matured into detailed designs and "build-to" specifications	Subsystem and box/unit requirements known, list the plans to go forward
9	Demonstrate that the best design options have been selected and implemented from trade studies and analyses, and summarize the trade studies performed.	Summarize the trade studies performed and rationale for decisions made.

10	Summarize any simulations in support of the design and operations	Description and summary results form all simulations, including performance, data flow, scheduling, etc.
11	Identify any software prototypes	Description and summary results from all SW prototypes
12	Provide preliminary Implementation and Integration and Test schedules	Provide Implementation Phase Schedules to a subsystem level. Provide specific schedules addressing pre-launch hardware and software I&T.
13	Summarize system-level test, verification planning and verification matrices	Design verification, test flow and calibration/test plans. This should include a verification matrix, functional qualification and performance test matrices.
14	Discuss the maturity of calibration and validation planning	Design verification, test flow and calibration/test plans. Provide a schedule showing system Calibration and Validation both pre-and post-launch.
15	Provide a listing of its corporate practices, processes, and procedures documents that relate assuring to Data Quality	* Parts selection, de-rating criteria, radiation hardness, qualification, and Failure Mode and Effects Analysis (FMEA) plans; Materials and Processes. * Identification of single point failure modes needs to be assessed as well as critical design areas which may be life limiting. * Identify the contamination requirements and control plan * Provide a Reliability analysis based on sound methodology, and identify impacts . Analyze the impacts and how mitigated.
16	Show that a rough order of magnitude system and life-cycle costs have been established	How system costing has been accomplished, the confidence in these numbers, and the amount of the Government share (Mgmt Splinter). Show that the proposed preliminary design can be expected to meet all the requirements within the planned cost and schedule. Are sufficient project reserves and schedule slack available
17	Identify technical cost drivers	List the LDCM (versus commercial) technical cost drivers, identify if there are mitigation plans, and identify impacts if unsuccessful.
18	Identify any potential long lead procurement items	List Long Lead Parts, the schedule for procuring them, the margin between expected deliveries and need dates, and any mitigation options.
19	Summarize ITAR information and status	List ITAR concerns, mitigation approaches, and status.
20	Show that work breakdown structures have been established	Show WBS to subsystem level
21	Show the maturity of management systems and processes	Describe the management approach including, but not limited to, program management, schedule, configuration control, subcontracts, mission assurance, and resource management. How have the processes of MPR2 worked. Lessons learned. Changes to be incorporated for Implementation phase

22	Discuss configuration and interface controls	Concentrate on inter-contractor and contractor to government interfaces.
23	Summarize any new programmatic processes/procedures and tools that have been established that will carry into the Implementation Phase	Changes since MPR2 in Management processes (i.e. lessons learned and improvements)
24	Update, if required, the assurance of Data Quality, engineering and process control programs and activities, and government/contractor surveillance plans	Changes since MPR2 in technical processes (i.e. lessons learned and improvements)

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