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Satellite Mission & Performance Risk Assessment Statement Of Work

Background

Our client, a UK based Company, is a specialist insurer that provides clients with underwriting and claims service worldwide. For its satellite insurance business, they seek consulting services to provide technical assessment and risk oversight on the technical profile of satellite/Launch vehicle/mission/on-board component in order to quantify, evaluate and price the risks it represents in terms of mission/performance failure and insurance coverage.

Scope

To provide technical assessment:

- Provide an engineering risk oversight on the technical profile of satellite/Launch vehicle/mission/on-board component in order to quantify, evaluate and price the risks it represents in terms of mission/performance failure and insurance
- From a risk perspective, analyze and evaluate for a given satellite/Launch vehicle/mission/on-board component:
 - the strengths and weaknesses,
 - the benefits and costs of design, manufacturing and testing/qualification choices
 - the project management
- Satellite/launch vehicle/mission/on-board component technical risks assessment, including analysis of manufacturers technical presentations, Q & A, block diagrams, testing and qualifications process
 - Loss formula assessment and sensitivity analysis
 - Failure analysis, including failure investigation reports
 - Redundancy schemes, technical margins
 - Satellite / payload mission, performance criterias, specs analysis
 - SPFs and FFIs identification and management
 - Satellite models, components heritage / reliability history
 - Launch vehicle reliability records
 - Manufacturers reputation, quality process
 - Telemetry analysis

Information subject to analysis, including:

Pre-Launch Information, including:

- Spacecraft system description



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- System performance descriptions and block diagrams
- Preliminary and updated pointing, power and fuel budgets
- Explanation of deployable mechanisms and sequences
- Communication antenna patterns, gains, and margins
- Spacecraft diagrams (including outline and major component locations)
- Subsystem/unit (heritage information or qualification for new technology)
- Test program description and flow diagrams (top level process)
- List of spacecraft single-point failure vulnerabilities
- Spacecraft reliability estimates
- Impacts on spacecraft from manufacturing environmental issues
- Target launch vehicle orbital injection parameters
- Mission plan orbital schematics
- Product line production problems (substantive generic issues having the potential of affecting a broad group of satellites)
- Production schedule (generally does not contain technical data)
- Contract technical specifications for the satellite
- Launch vehicle interface control specification
- Contract waivers deviations (if containing controlled technical data)
- Contract revisions (if containing controlled technical data)
- Explanation of test anomalies resulting in spacecraft hardware change-outs or repair and description of such change-out or repair validation.
- Update to product line issues (if applicable)
- Launch vehicle test and integration anomalies at launch site
- Launch vehicle product line issues (if applicable)
- Launch vehicle systems review (~L-1 to 2 months)
- Briefing charts from launch site Launch Readiness Review (~L-1 to 2 days)

Post-Launch Mission Information, including:

- Spacecraft acquisition and general health status
- Platform subsystems activation and performance
- Status of orbital manoeuvres
- Antenna/mechanism deployments
- Payload subsystems activation and performance
- In-orbit test data with anomaly reporting
- Spacecraft delivery reports to the satellite operator by the satellite manufacturer

In-Orbit Operations Information, including:

- Periodic satellite health and anomaly information (e.g., bus/payload performance and functionality, including explanation and status of anomalies/failures since commissioning, power and propellant budgets)
- Questions and Answers related to above



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Notice of Occurrence and Proof of Loss Submittals and Follow-up (documents explaining technical facts surrounding any event likely to give rise to a loss, any possible mitigating measures, and the amount and basis of the loss claimed), including:

- Circumstance of the occurrence or event
- Detail to support the basis and amount of any claim payment
- Summary of special tests in-orbit and on the ground
- Sequence of in-orbit and on-the-ground commands sent to the spacecraft during the period before and after the event
- Telemetry data and technical reports concerning performance during the period before and after the event
- Evaluation of loss mitigation measures
- Satellite operations manuals and systems summary extracts concerning systems involved in loss
- Procedures and schedule for any resulting failure investigation
- Description of failure modes considered most probable with historical baseline
- Questions and Answers related to Proof of Loss Submission

Project Timing and Deliverables

- Majority of tasks will consist in analysis of paper materials to be submitted electronically or by mail or directly from manufacturers, satellite operators, brokers
- Possibility of attending satellite technical presentations and/or visit satellite facilities (1 or 2 opportunities / year)
- Analysis provided by written reports and/or phone depending of complexity / urgency of the subject matter and/or via face to face meetings
- Normal assignments are due within 2 weeks from notification
- Urgent assignments requires an immediate response of within a day with follow up reports within 3-4 days

Period of Performance – TBA (1 year)

Estimated volume of Work – about 150 – 300 hours per year or 2 – 3 days per months depending of activity, plus any possible travels to satellite technical briefings or manufacturing facilities

*Run by space professionals, Spacelinks provide specialist recruitment in the space and defence industry. Spacelinks are acting as a Recruitment Agency with regards to this position. When applying, please send your CV as a Word document to cv@spacelinks.com and please indicate your current/latest salary and earliest date of availability. Make sure to include the vacancy number **SL-03201** in the subject line as we use email filtering.*