**SPxY Project:** **Role Card: Electrical Engineer**

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| **Filename:** 112004\_ORG\_R01\_Role Card-Electrical Engineer  **Project:** Project SPxY, EPFL Spacecraft team | **Prepared by:** Valentin Suppa-Gallezot  **Approved by:** TBA |

**Role Card: Electrical Engineer**

**Role Overview:** The Electrical Engineer for the Spatial Project's Antenna Pointing Mechanism (APM) is responsible for designing and building an electrical cabinet to power the APM, ensuring the safety of the system with an emergency stop mechanism, and performing testing to validate the electrical components' performance. This role is crucial in providing electrical power and safeguarding the system's operation.

**Key Duties and Responsibilities:**

**1. Electrical Cabinet Design and Construction:**

* Design the electrical cabinet layout, considering space, power distribution, and component placement.
* Select and source electrical components, including relays, switches, circuit breakers, and wiring.
* Ensure the electrical cabinet meets safety and compliance standards.

**2. Power Distribution:**

* Develop an efficient power distribution system for the APM, considering voltage and current requirements.
* Design and implement electrical circuits for control systems and sensors.
* Verify the electrical system's compatibility with the APM's power needs.

**3. Safety Measures:**

* Implement an emergency stop (E-stop) mechanism in the electrical cabinet to halt APM operation in case of critical issues.
* Ensure that the electrical system complies with safety standards and regulations.
* Collaborate with the project team to develop safety protocols and procedures.

**4. Electrical Testing:**

* Perform electrical tests to validate the functionality and reliability of the electrical cabinet.
* Conduct tests to identify and rectify electrical faults, including short circuits and voltage irregularities.
* Document test results and collaborate with the system engineer and project manager to address issues.

**5. Integration and Compatibility:**

* Ensure the electrical cabinet integrates seamlessly with the APM and other spacecraft or satellite components.
* Verify the compatibility of electrical connections, interfaces, and communication protocols.
* Troubleshoot and resolve integration-related issues.

**6. Compliance and Documentation:**

* Maintain comprehensive records of electrical design, construction, and testing activities.
* Document compliance with safety standards and regulations.
* Contribute to the preparation of technical documentation and safety reports.

**7. Continuous Improvement:**

* Stay updated with advancements in electrical engineering and safety practices.
* Propose improvements to enhance the electrical system's performance and reliability.

**Limits of Authority:** The Electrical Engineer has the authority to design, build, and test the electrical cabinet, ensuring its performance, safety, and compliance. However, significant changes to the project's electrical systems, safety protocols, or major budgetary decisions may require consultation with the project manager and collaboration with other team members. This role should also closely align with the system engineer to address electrical-related issues.

*Note: The duties and responsibilities listed in this role card are not exhaustive and may be subject to change as project requirements evolve.*