**SPxY Project: Role Card: Software Engineer**

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| **Filename:** 112006\_ORG\_R01\_Role Card-Software Engineer  **Project:** Project SPxY, EPFL Spacecraft team | **Prepared by:** Valentin Suppa-Gallezot  **Approved by:** TBA |

**Role Card: Software Engineer**

**Role Overview:** The Software Engineer for the SPxY project is responsible for collaborating with the control engineer to design an intuitive and easily modifiable Graphical User Interface (GUI) in Python. This role also involves establishing communication links between the project's servers and the onboard computer in the APM.

**Key Duties and Responsibilities:**

**1. GUI Design and Development:**

* Collaborate with the control engineer to conceptualize and design a user-friendly GUI for the APM in Python.
* Ensure the GUI provides intuitive control and monitoring features for the APM's operation.
* Develop interactive and visually appealing interfaces for easy navigation.

**2. System Integration:**

* Establish communication protocols and interfaces between the GUI and the control system of the APM.
* Collaborate with the electrical engineer to ensure the GUI interacts seamlessly with the electrical components.
* Implement data visualization and control functions in the GUI for real-time monitoring.

**3. Customization and Modifiability:**

* Design the GUI to be easily modifiable and adaptable to changing project requirements.
* Develop a modular structure that allows for the addition of new features and functionality.
* Collaborate with the control engineer to integrate control algorithms into the GUI.

**4. Server-Computer Communication:**

* Set up communication links between the project's servers and the onboard computer in the APM.
* Ensure data exchange, software updates, and remote monitoring capabilities.
* Implement security measures to protect communication channels.

**5. Documentation and Training:**

* Create comprehensive documentation for the GUI, including user manuals and technical guides.
* Provide training and support to the project team for GUI operation and modification.
* Maintain records of design decisions, updates, and user feedback.

**Limits of Authority:** The Software Engineer is responsible for the design and development of the GUI, software integration, and establishing communication links. However, significant changes to the project's software architecture, budget, or critical design decisions may require approval from the project manager or higher-level management. This role should closely collaborate with the control engineer to ensure the GUI aligns with control algorithms and project objectives.

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