Secure Software Development (CMP020X306) Generated Case Study

Company name

AstroDev

Company profile

AstroDev is a cutting-edge start-up specializing in innovative space technology solutions. Founded by a team of visionaries with expertise in aerospace engineering and computer science, AstroDev aims to revolutionize the industry through its pioneering approach to software development for space exploration. By combining state-of-the-art network connectivity and robust software design, AstroDev's products ensure seamless communication between spacecraft systems, enhancing mission efficiency and safety.

Product

GalacticLink

Users

GalacticLink Users

Astronomers

- **Seamless Data Transmission**: GalacticLink facilitates the secure transfer of large astronomical datasets between spacecraft, ground stations, and research centers. This accelerates data analysis and enables scientists to make groundbreaking discoveries sooner.

Space Agencies

- **Enhanced Mission Control**: By integrating GalacticLink into their systems, space agencies can monitor mission progress in real-time, receive critical alerts, and respond promptly to system anomalies. This ensures the success of complex space missions.

System architecture

GalacticLink Architecture

1. **Spacecraft System**: GalacticLink is integrated into spacecraft systems, enabling secure communication between onboard computers and ground stations.

2. **Ground Station Network**: A decentralized network of ground stations connects to the spacecraft system via satellite or terrestrial links, ensuring global coverage and redundancy.
3. **Cloud-Based Data Center**: The cloud data center processes and stores astronomical data from space missions, providing secure access for researchers and scientists worldwide.

Data

GalacticLink Data Storage

1. **Astronomical Data**: GalacticLink stores large datasets from space missions, including images, spectrograms, and other scientific observations.
2. **Spacecraft Telemetry**: The system records telemetry data from spacecraft systems, such as temperature, pressure, and power consumption.
3. **Mission Control Communications**: GalacticLink logs communication records between mission control centers and spacecraft, ensuring audit trails for critical decisions.

GalacticLink does not store personal data of customers or staff. All user information is handled securely through separate, compliant systems to maintain the highest level of data privacy.

Cyber risk appetite

AstroDev has a high cyber security risk appetite. The company is willing to take on significant cyber risks in pursuit of innovation and market leadership. This approach enables AstroDev to push the boundaries of space technology and drive growth, but also increases the potential for costly cyber breaches and reputational damage.

Employee awareness of cyber security

AstroDev employees have limited awareness of cyber security best practices. The company's focus on innovation and rapid development has led to a prioritization of technical skills over cyber security training. Many employees are not aware of common cyber threats, safe coding practices, or secure communication protocols, increasing the risk of human error contributing to potential breaches.