Selected Function and Scope:

This will focus on the student participation in events within the USU system. This function will allow the student members to search for event details, subscribe to updates of events and purchase or register tickets for events organized by societies. I chose this function because it is central to the system and involves multiple user types as well as processing sensitive personal data, so it must operate efficiently at all times. The quality requirements below define how well the function must perform beyond its functional correctness(ISO/IEC,2011).

Quality Requirements:

The system must ensure that all student data processed during the event subscription, registration and purchasing tickets is always protected against unauthorized access. The system shall require authenticated access for all students before allowing them to purchase tickets or for registration. It should all implement role-based access control to make sure that only authorised users have access to the right thing according to their roles. All of the sensitive data including personal information must be encrypted during transmission through communications. The system should store personal data in accordance with the data protection regulation laws which will ensure confidentiality of student information.(European Union,2016). The system shall allow Students to manage their own communications and notifications to protect their privacy. All of this aligns to the security and privacy principles for information systems(ISO/IEC,2022).

Performance:

The system must be responsive and fast for students participating in events. It should return event search results within a fast time frame under normal circumstances. As well as this, the event registration and ticket purchasing transactions should be completed within little to no delay for the user. Notifications should be delivered to subscribed students in real time and the system as a whole should maintain high performance levels during peak usage periods.

Reliability:

The system should provide consistent operation of the student participation function. The system should ensure that confirmed registrations and ticket purchases are not lost because of system failures so the system should maintain consistency for everything including, registration, even capacity and so on. The system should be able to tolerate partial failures allowing the main services to still run even if supporting devices are unavailable. The system should also be able to log critical operations so in other words monitor the system to make sure there are minimal failures. Reliability is essential for data accuracy and availability which is critical (Avizienis et all.,2004).

Scalability: The system should be able to scale to support increasing numbers of users and events. This means that it should be able to support large numbers of users during high demand and as well as this, the function should scale horizontally to accommodate growth in data volumes too. The system should be able to support multiple operations to ensure separation of data between student unions specific to their university. All of this should be

reached without significant degradation of performance or reliability. This is essential for cloud-based,nation-wise platforms like USU(Kleppmann, 2017).

References:

-(European Union (2016) General Data Protection Regulation (GDPR). Regulation (EU) 2016/679.https://eur-lex.europa.eu/homepage.html Accessed 28th Jan 2026)
-(ISO/IEC (2011) ISO/IEC 25010: Systems and software engineering — Systems and software Quality Requirements and Evaluation (SQuaRE). Geneva: International Organization for Standardization.https://www.iso.org/standard/35733.html Accessed 28th jan 2026)
-(ISO/IEC (2022) ISO/IEC 27001: Information security management systems — Requirements. Geneva: International Organization for Standardization.https://www.iso.org/home.html Accessed 28th Jan 2026)
-(Kleppmann, M. (2017) Designing Data-Intensive Applications. Sebastopol: O'Reilly Media.)