

# USU Operation System – Quality Requirements

| Attribute              | Description   | Metric / Target   |
|------------------------|---|---|
| <b>Performance</b>     | The system shall process event creation and publication within a reasonable time to ensure responsiveness during high traffic.      | Average response time less than 3 seconds under 500 concurrent users. |
| <b>Availability</b>    | The system must be operational during student union activities, allowing uninterrupted coordination between institutions.           | Uptime more than 99.5% of the time during academic periods.           |
| <b>Security</b>        | Only authenticated and authorised USU officers can perform create/update/delete operations. All API calls must be encrypted.        | All admin endpoints must be protected with encryption.                |
| <b>Reliability</b>     | Announcements and event updates must not be lost or duplicated even during network interruptions.                                   | 0% data loss in transactions; retries enabled for failed API calls.   |
| <b>Scalability</b>     | The system shall scale horizontally to handle multiple universities without performance degradation.                                | Linear performance up to 10 times load increase.                      |
| <b>Maintainability</b> | The codebase must allow easy deployment of updates to subsystems (operation, management, student app) without service interruption. | Mean Time to Deploy less than 10 minutes.                             |

## **Justification:**

Since the USU Operation System acts as the federation-level control platform, its main quality requirements concern reliability, security, and availability. These make sure consistent coordination among universities and prevent data loss during national event publication or modification.

