

Software Requirement Specification(SRS):

The complete requirement specification based on our elicitation for SmartEvent.

Functional Requirements:

ID	Requirement	Description	Stakeholders
FR-01	User Registration & Authentication	The system shall allow users to register with name, email, password, and role-selection; provide login, logout, password-reset, and email verification.	All Users
FR-02	User Profile & Account Management	Users shall be able to view and update their profile details (contact info, profile picture, preferences) and change the password.	All Users
FR-03	Role-Based Access Control	The system shall enforce permissions so Organizers, Department Admins, Logistics & Media, and Volunteers see only their authorized features.	All Users
FR-04	Event Proposal Submission	Organizers shall be able to create event proposals with title, description, date/time, category, and attachments (budget, permissions).	Organizers
FR-05	Proposal Review & Approval	Department Admins shall have a dashboard to filter/search pending proposals, review details, approve or	Department Admins

		reject with comments, and notify organizers.	
FR-06	Venue & Resource Booking	Organizers shall reserve venues or resources via a calendar UI; system must detect conflicts and suggest alternate slots.	Organizers, Logistics & Media
FR-07	Task Coordination & Tracking	Organizers shall create tasks (description, assignee, deadline), view progress (Kanban or list), and receive automated reminders.	Organizers, Volunteers
FR-08	Volunteer Registration & Assignment	Volunteers shall browse approved events, sign up for roles; Organizers shall assign volunteers and notify of their duties.	Volunteers, Organizers
FR-09	Document & Media Management	Organizers shall upload event-related files; Logistics & Media shall approve photos/videos for the public gallery; support versioning and metadata tagging.	Organizers, Logistics & Media
FR-10	Real-Time Notifications	The system shall send in-app and email alerts for proposal status changes, bookings, task deadlines, and feedback requests.	All Users
FR-11	Feedback Collection & Reporting	After event completion, system shall send feedback forms, collect responses,	Organizers, Department Admins

		and generate summary reports for Organizers and Admins.	
FR-12	Analytics & Dashboard	Department Admins shall view dashboards with metrics event counts, approval rates, volunteer engagement) and export CSV/PDF reports.	Department Admins

Performance Requirements:

A requirement specifying performance characteristics the system must possess.

1. Speed and Latency Requirements:

ID	Requirement	Description	Stakeholders
PR-01	Page Load Time	Landing and dashboard pages shall render within 2 seconds under normal load conditions.	All Users
PR-02	Interactive Response	Calendar and Kanban views shall update within 3 seconds when filtering or moving items.	Organizers, Admins

2. Precision and Accuracy Requirements

- There are no special precision or accuracy requirements beyond correct data display and calculations of counts/statistics.

3. Capacity Requirements:

ID	Requirement	Description	Stakeholders
PR-03	Concurrent Users	The system shall support at least 200 concurrent active users without degradation.	All Users
PR-04	Data Storage	Initially support storage of up to 10,000 events, 100,000 tasks, and 200,000 user records, with room to grow via scalable database design.	All Users

Dependability Requirements

The platform must ensure continuous, correct operation under expected and fault conditions, refocusing available resources on critical services rather than over-provisioning for a failure-proof system.

1. Reliability and Availability

ID	Requirement	Description	Stakeholders
DR-01	The system shall achieve 99.5% uptime	Platform operational 24×7, excluding scheduled maintenance (≤ 2 hours/month). - Users receive 24 hour advance notice of planned downtime. - Automated health checks and recovery mechanisms detect and recover from interruptions.	All Users, Department Admins

2. Robustness and Fault Tolerance Requirements

ID	Requirement	Description	Stakeholders
DR-02	The system shall gracefully handle external service failures	Queue outbound requests (e.g., calendar API, email/SMS) during outages and retry without data loss. - On internal errors (e.g., timeouts), perform automated retries or fallback procedures and log incidents for later analysis.	Organizers, Volunteers, Logistics & Media, Department Admins

3. Usability Requirements:

ID	Requirement	Description	Stakeholders
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UR-01	Learnability	New users (Organizer/Volunteer) shall be able to complete first-time onboarding and create a proposal or volunteer registration within 10 minutes without instructor help.	All Users
UR-02	User Interface Responsiveness	UI interactions (form submits, dialog opens) shall respond within 300 ms for local actions; full page transitions within 2 s under normal load.	All Users
UR-03	Help & Documentation	Contextual help tooltips must be available on all major forms; an online user guide and FAQ shall be accessible from the dashboard.	All Users, Admin
UR-04	Error Feedback	Validation errors shall clearly indicate the field and corrective action; system error messages must give a	All Users, Support

		friendly message and an error code for support.	
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4. Maintainability Requirements:

ID	Requirement	Description	Stakeholders
MR-01	Modular Codebase	Code shall follow modular architecture (separation of concerns: API, UI, Data access); each module must have a single responsibility.	Dev Team, Maintainers
MR-02	Test Coverage	Automated tests (unit + integration) shall cover $\geq 70\%$ of backend critical paths and $\geq 50\%$ of frontend critical flows before release.	Dev Team, QA
MR-03	Code Quality	Static analysis checks (linter) must run in CI; merge blocked if critical issues found.	Dev Team

MR-04	Documentation	Developer README, API docs (OpenAPI/Swagger), and database schema docs must be maintained and updated with each release.	Dev Team, Maintainers
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5. Portability & Compatibility Requirements:

ID	Requirement	Description	Stakeholders
PCR-01	Browser Support	The web UI shall support latest two major versions of Chrome, Firefox, Edge, and Safari, and be functional on mobile browsers.	All Users
PCR-02	Deploy Targets	Application shall be deployable to Linux-based servers and major cloud providers (AWS, GCP, Azure) using container images (Docker).	Ops, Dev Team

PCR-03	Data Export	Admins shall be able to export reports in CSV or PDF so data can be reused in other systems.	Admins
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6. Scalability & Capacity Requirements:

ID	Requirement	Description	Stakeholders
SCR-01	Concurrent Users	The system shall support 200 concurrent active users with acceptable performance (95th–percentile page load ≤ 2s).	All Users, Admin
SCR-02	Horizontal Scaling	Services must be designed to scale horizontally (stateless app servers, separate stateful DB) and support adding instances behind a load balancer.	Dev Team, Ops

SCR-03	Data Growth	DB schema and storage shall support growth to 100k events and 1M users/records via partitioning and archiving strategy.	Admin, Dev Team
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7. Backup, Recovery & Disaster Recovery:

ID	Requirement	Description	Stakeholders
BDR-01	Backups	Production database backups shall be taken daily and retained for 30 days.	Ops, Admin
BDR-02	Recovery Time Objective (RTO)	In case of major outage, system shall be restorable to working state within 4 hours (RTO).	Ops, Admin
BDR-03	Recovery Point Objective (RPO)	Data loss tolerated shall not exceed 1 hour (RPO) of incoming transactions.	Ops, Admin
BDR-04	Backup Verification	Backups must be automatically verified weekly via test restore of a sample dataset.	Ops

8. Logging, Monitoring & Auditability:

ID	Requirement	Description	Stakeholders
LMA-01	Centralized Logging	All services shall send logs to a centralized logging system (e.g., ELK, Stackdriver) retaining logs for 90 days.	Ops, Dev Team, Security
LMA-02	Metrics & Alerts	Key metrics (response time, error rates, CPU/memory, queue lengths) must be monitored with alerts for threshold breaches (e.g., 5xx rate > 1%).	Ops
LMA-03	Audit Trail	All critical actions (proposal approval/rejection, user role changes, booking changes) must be recorded in an immutable audit log with timestamp and actor ID.	Admin, Security

9. Accessibility & Internationalization:

ID	Requirement	Description	Stakeholders
AI-01	Accessibility	UI must meet WCAG 2.1 AA guidelines for color contrast, keyboard navigation, and screen-reader compatibility for primary flows.	All Users
AI-02	Language Support	The system shall support Bangla and English for UI labels and notifications; text resources must be externalized for i18n.	All Users

10. Reliability & Availability:

ID	Requirement	Description	Stakeholders
RAV-01	Availability SLA	System shall aim for 99.5% uptime per month (excluding scheduled maintenance).	All Users, Admin
RAV-02	Health Checks & Failover	Application shall expose health endpoints for orchestration; automated restarts or reroutes shall be	Ops

		configured in case of instance failure.	
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11. Maintainability Operational Targets:

ID	Requirement	Description	Stakeholders
MOT-01	Release Cadence	Minor releases (bug fixes) may be deployed weekly; feature releases every 4–6 weeks with release notes.	Dev Team, Admin
MOT-02	Rollback Plan	Every production release must include a rollback plan enabling reversion to prior release within 30 minutes.	Dev Team, Ops

3. Safety Critical Requirements:

There are no safety-critical requirements for SmartEvent, as the system does not perform any life-safety or physical-control functions.