

PROPOSAL

Smart & Safe School System

Automated Attendance | Auto Substitution | Live Bus Tracking | Parent Alerts

PREPARED FOR [School Name], [City] — 500 students, 5 buses

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REFERENCE Proposal v1.0 — 500-student edition

Executive Summary

The proposal at a glance

We propose a fully integrated digital platform for [School Name] that automates attendance for **500 students** and all staff, arranges teacher substitutions automatically, tracks all **5 school buses** live, and keeps parents informed at every step of their child's journey. The result: **safer children, more teaching time, less paperwork, and greater parent trust.**

~240 hrs

Teaching time saved every year

0 min

Manual substitute planning

~10 min

Entry time for 500 students

Real-time

Safety alerts to parents

"Every parent will know, within seconds, that their child boarded the bus, reached school, and got home safely."

Investment Summary

Item	Amount (approx.)
School hardware (one-time)	Rs. 1.91 L - 4.18 L
Per-bus device (one-time)	Rs. 6,500 - 16,000 per bus
Option A - Managed service (we build, run and support it)	Monthly fee, all-inclusive - on request
Option B - Fixed build & handover (build, install, 6 months support)	One-time fee - on request
Monthly running cost - Option B only (cloud, SMS, SIMs)	Rs. 5,400 - 14,500
Time to full go-live	3-5 months, delivered in phases
Potential cost recovery	Up to Rs. 1.5 L / year (optional parent tech fee)

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1. Current Challenges & Our Solution

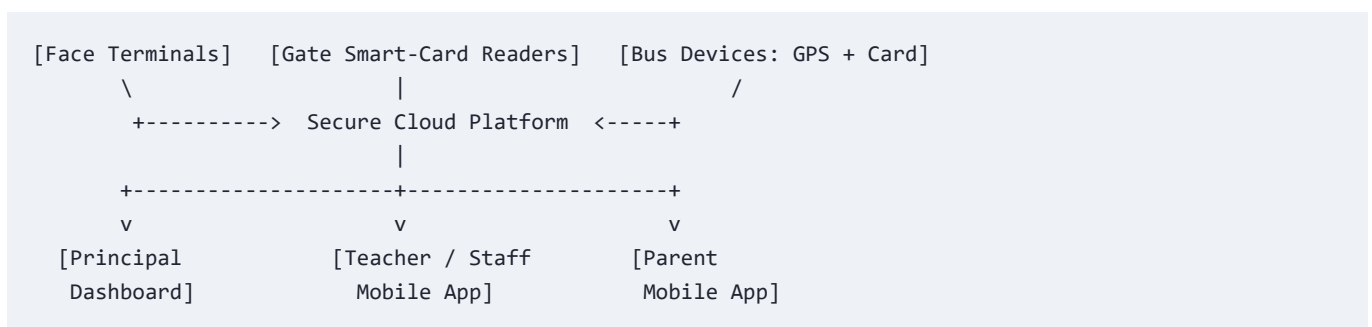
What slows the school down today, and how we fix it

Area	Today	With the Smart School System
Student attendance	Manual roll call in ~13 classes, paper registers (~1 hr/day in total)	Automatic at the gate in seconds; zero class time used
Substitution	Coordinator spends 20-40 min every morning; classes sometimes left unattended	Substitutes assigned automatically by 8:15 AM and notified
Bus safety	Parents do not know where the bus or their child is	Live bus location and boarding/drop alerts for every child
Staff attendance	Registers or standalone biometrics; manual salary reports	Face scan, automatic late marking, one-click payroll reports
Communication	Frequent parent phone calls to the office	Parents informed automatically through the app
Records	Paper-based; slow to compile for inspections	Complete digital records, audit-ready at any time

Six Integrated Modules

Module	What it does
1. Staff Attendance	Face-scan attendance, late tracking, leave and monthly payroll reports
2. Teacher Attendance & Auto Substitution	Detects absences and assigns the best available substitute automatically
3. Student Gate Attendance	Walk-through smart-card scanning - no queues, no stopping
4. Bus Tracking & Safety	Live GPS, boarding/drop scans, panic button and safety alerts
5. Parent App	Instant alerts, live bus map, attendance history, school notices
6. Principal Dashboard & Reports	Live view of the entire school and one-click reports

How It Works



2. Staff Module (Non-Teaching)

Office staff, accountants, clerks, support staff, security guards, drivers and bus attendants

Key Features

- **Touchless face-scan attendance** at entry and exit - no registers, no proxies.
- **Automatic late marking** against each person's shift, with instant alerts to the administrator.
- **Shift support** for guards, drivers and attendants.
- **Leave management** in the app with automatic leave balances.
- **Monthly attendance and payroll report** generated automatically (Excel/PDF).

Daily Workflow

Staff member arrives -> face scan (under 1 second)
-> Compared with shift timing -> Present / Late
-> Late? -> Administrator notified
-> Exit scan -> working hours calculated
-> Month end -> attendance and payroll report ready

Hardware

Device	Location	Qty
Face recognition terminal with anti-spoofing	Staff room	1
Weatherproof outdoor face terminal	Main gate (guards, drivers, support staff)	1
UPS power backup	With each terminal	2

Mandatory Profile Data

Category	Details
Personal	Full name, employee ID, photo, mobile number, address
Employment	Designation, department, joining date, shift timing
Verification	ID proof; police verification for guards and drivers
Drivers	Driving licence number and expiry, assigned bus
Emergency	Emergency contact

Data completeness rule: a profile is activated only when all mandatory fields are filled, so the school always holds a complete and verified record of every staff member.

3. Teacher & Principal Module

Automatic attendance, intelligent substitution and leave management

Key Features

- Face-scan attendance; teachers not scanned by the cut-off time (e.g. 8:15 AM) are marked absent automatically.
- **Intelligent auto-substitution** for every period of an absent teacher.
- Instant notifications to the substitute teacher and the Principal.
- Teacher app shows today's timetable, substitution duties and leave status.
- The Principal can review and override any assignment at any time.

How the Best Substitute Is Chosen

```
8:15 AM -> list of absent / on-leave teachers
-> their periods for today are identified from the timetable
-> for each period, the system selects a free teacher:
    Priority 1: same subject
    Priority 2: already teaches that class
    Priority 3: lightest workload today
    Fairness rule: max 2 substitute periods per teacher per day
-> substitute + Principal notified instantly
-> absent teacher arrives late -> remaining periods returned
```

Leave Workflow

```
Teacher applies in app -> Principal approves / rejects
-> Approved in advance -> substitutes pre-planned
-> Same-day emergency -> auto-substitution runs immediately
```

Mandatory Profile Data

Category	Details
Personal	Full name, employee ID, photo, mobile, email
Academic	Subjects, classes/sections taught, class-teacher role, qualifications
Timetable	Weekly period schedule (required for auto-substitution)

With roughly 13 classes and 20-25 teaching staff, a single staff-room terminal clears the morning rush comfortably. A second terminal is added only if the school grows past 60 staff.

4. Student Module (500 Students)

Queue-free gate entry, automatic attendance and instant parent alerts

Key Features

- Every student receives a **Smart ID Card** printed with photo and name.
- Cards are read from **3-8 metres** while students walk through - even from a bag or pocket.
- The **same card** works for tap-scanning on the bus - one card for everything.
- A camera captures a photo at every scan, confirming the right child used the card.
- Attendance is recorded instantly and parents are notified.

Capacity Planning

Parameter	Value
Students	500
Morning entry window	~15 minutes
Required throughput	~35 students per minute
Throughput per lane	50+ students per minute (walk-through)
Lanes proposed	2 (1 entry + 1 exit / backup)

One lane already carries the whole school. The second lane is there so exit traffic never queues behind entry, and so a single reader fault never stops attendance.

A Student's Day

```
08:05 Gate scan -> marked PRESENT
      Parent: 'Your child reached school at 8:05 AM'
08:30 Cut-off -> not scanned -> marked ABSENT
      Parent: 'Your child has not reached school today'
13:30 Exit scan -> Parent: 'Your child left school at 1:30 PM'
```

Mandatory Profile Data

Category	Details
Student	Full name, admission no., class, section, roll no., photo
Parents	Names, verified mobile number, address
Transport	Bus route, pickup and drop stop, or parent pickup
Authorised pickup	Persons allowed to collect the child (name, relation, photo)
Consent	Parental consent for data and tracking

5. Bus Tracking & Safety

One compact device per bus: GPS + card scanning + panic button — for all 5 buses

What the Bus Device Does

- **Live GPS location** every 10-30 seconds, visible to parents and the school.
- **Card tap** when a child boards or leaves the bus, with an instant parent alert.
- **Panic button** that alerts the school immediately in an emergency.
- Wired to the bus battery - it cannot be switched off by the driver, and tampering triggers an alert.
- Stores data when there is no network and syncs automatically afterwards.

One Trip, Step by Step

```
06:50 Engine on -> trip starts automatically
07:00 Bus approaching stop -> Parents: 'Bus arriving in 5 minutes'
07:02 Child taps card -> Parent: 'Your child boarded the bus'
07:50 Bus reaches school -> children tap off
08:00 CHECK: boarded = dropped?
      No -> ALERT: 'A child may still be on the bus'
Return trip -> Parent: 'Your child got off at the home stop'
```

Automatic Safety Alerts

Situation	Alert sent to
Child boarded the bus but did not enter the school gate	Administrator + Parent
Bus leaves its route, or stops for 10+ minutes	Administrator + Transport in-charge
Over-speeding	Administrator
Child gets off at the wrong stop	Administrator + Parent
Child not tapped off at trip end	Administrator (check the bus)
Panic button pressed	Administrator + Principal (immediately)
Device offline or tampered with	Administrator

Compliance: AIS-140 certified devices will be used. School-bus safety rules vary by state; current Maharashtra requirements will be confirmed with the local RTO before purchase.

6. Parent App, Principal Dashboard & Reports

The right information for every person

Parent App (Android & iOS)

- Instant alerts: boarded bus, reached school, left school, reached home stop.
- Live bus location with estimated arrival time.
- Daily and monthly attendance history.
- School notices and announcements.
- One login for parents with more than one child at the school.

Teacher & Staff App

- Own attendance, today's timetable and substitution duties.
- Leave requests and approval status.
- Class teachers: today's attendance for their class.

Principal Dashboard

View	What it shows
Today	Live attendance of staff, teachers and students (present / absent / late)
Substitutions	Today's automatic assignments, with an option to change them
Bus Map	All 5 buses live on one map, with their alerts
Alerts	Safety alerts, offline devices, missing students
Reports	Monthly attendance, late arrivals, substitutions, bus trips

One-Click Reports (Excel / PDF)

Report	Used for
Staff monthly attendance and late arrivals	Payroll processing
Class-wise student attendance	Class teachers and Principal
Teacher substitution summary	Fair workload distribution
Bus trips and alert log	Transport in-charge
Students with low attendance	Parent meetings and follow-up

7. Hardware & Specifications

Proven, open-standard devices — sized for 500 students and 5 buses

Device	Location	Qty	Key Specifications
Face recognition terminal	Staff room	1	<1 s recognition, liveness detection, offline storage, open API
Outdoor face terminal	Main gate	1	IP65 weatherproof, works in direct sunlight
UHF smart-card reader	School gate	2	Walk-through reading, 3-8 m range, multi-card anti-collision
UHF antennas	School gate	4	Two per lane
IP cameras	Gate lanes	2	Photo capture at each scan
Network video recorder	Server room	1	Camera recording
Gate controller PC	Server room	1	Collects gate data; works offline
Dual-frequency smart ID cards	Students	550	UHF (gate) + 13.56 MHz (bus tap); 500 + 10% spare
Bus combo device	Each bus	5	GPS + card reader + panic button + 4G, AIS-140 certified
Network & power	School	1 set	Network switch, online UPS, backup internet, cabling
Spare stock	School	1 set	Backup devices + 50 extra cards

About the Smart ID Card

- The card stores only a **unique ID number** - no name, phone number or address is stored on it.
- A lost card is blocked instantly and a new card is linked in minutes.
- No battery - it lasts for years. A protective card holder is supplied.
- Sample cards will be tested on the school's own readers before the bulk order.

Our Hardware Principles

- **Open API devices only** - the school is never locked in to a single vendor.
- **Offline-first** - every device keeps working and stores data during internet outages.
- **Pilot before purchase** - devices are proven on site before any bulk order.

Note: final brands and models will be confirmed after vendor quotations and on-site demo testing.

8. Data Security & Privacy

Protecting every child's and staff member's data

Area	Measures
Login	Password + OTP; two-factor authentication for Principal and administrators
Access control	Teachers see only their classes, parents only their own child, drivers only their route
Encryption	All data encrypted in transit (HTTPS/TLS); sensitive fields encrypted in the database
Devices	Isolated secure network; default passwords changed; never exposed directly to the internet
Audit trail	Every change recorded - who, what and when
Data retention	Location and photo data automatically deleted after a set period (e.g. 30-90 days)
Backup	Automatic daily backups stored in a separate location
Security testing	Independent security audit (VAPT) before launch

Legal Compliance

- **Digital Personal Data Protection Act, 2023:** verifiable parental consent for all children's data.
- Data is used only for school purposes and is never shared with third parties.
- A child's data can be deleted on request after they leave the school.
- All data is hosted in India (Mumbai region).

Business Continuity

If this happens	The system responds
Internet outage	Devices store data locally and sync automatically
Server issue	School follows a simple manual backup process
Device failure	Replaced immediately from spare stock
Any device or server offline	Technical team alerted automatically

9. Investment

One-time, monthly and yearly costs for 500 students and 5 buses

One-time Hardware - School

Section	Items	Cost (approx.)
Staff & Teachers	2 face terminals + 2 UPS	Rs. 33,000 - 65,000
Student Gate	2 UHF readers, 4 antennas, 2 cameras, NVR, controller PC	Rs. 86,000 - 1.88 L
Student ID Cards	550 dual-frequency smart cards	Rs. 16,500 - 55,000
Network & Power	Switch, online UPS, 4G router, cabling	Rs. 25,000 - 50,000
Spares	Backup devices + 50 cards	Rs. 30,000 - 60,000
School Total		Rs. 1.91 L - 4.18 L

One-time Hardware - Per Bus

Item	Cost (approx.)
GPS + card-reader combo device (AIS-140)	Rs. 6,000 - 15,000
Wiring kit and fuse	Rs. 500 - 1,000
Per bus	Rs. 6,500 - 16,000
All 5 buses	Rs. 32,500 - 80,000
Optional: in-bus camera recorder + 2 cameras	+ Rs. 10,000 - 25,000 per bus

Monthly Running Cost

Item	Monthly (approx.)
Internet + backup 4G	Rs. 1,700 - 3,400
Secure cloud hosting	Rs. 2,000 - 5,000
SMS (absence and emergency only; routine alerts are free via the app)	Rs. 200 - 600
Maps, domain, SSL	Rs. 100 - 2,200
Per bus (SIM + AIS-140 renewal)	Rs. 275 - 650 per bus

Total by Fleet Size

Buses	One-time Total	Monthly Total
3	Rs. 2.1 L - 4.7 L	Rs. 4,800 - 13,200
5 (proposed)	Rs. 2.2 L - 5.0 L	Rs. 5,400 - 14,500
8	Rs. 2.4 L - 5.5 L	Rs. 6,200 - 16,400
10	Rs. 2.6 L - 5.8 L	Rs. 6,800 - 17,700

Who pays this: under the managed service (Option A, page 12) these running costs are included in the monthly fee; they fall to the school only under Option B. **Yearly extras** of approx. Rs. 10,000 - 25,000 (cards, app store accounts, repairs) apply either way.

9. Investment (continued)

Choose the package that fits the school

Package Options

Package	What it covers	One-time hardware
Essential	Staff and teacher attendance, auto-substitution, student gate attendance, parent app and Principal dashboard	Rs. 1.91 L - 4.18 L
Complete (Recommended)	Everything in Essential, plus bus GPS, boarding and drop scanning, safety alerts and the panic button	+ Rs. 32,500 - 80,000 (5 buses)
Premium	Everything in Complete, plus in-bus camera recording	+ Rs. 82,500 - 2.05 L (5 buses)

Complete and Premium amounts are added to the Essential figure. Service charges are separate - see the two options below.

Two Ways to Engage

	Option A - Managed Service	Option B - Fixed Build & Handover
What the school gets	We build, run and support the whole platform	We build the software and hand it over
Software development	Included in the monthly fee	Included in the one-time fee
Cloud hosting, SMS and bus SIMs	Included	School's own accounts (Rs. 5,400 - 14,500 / month)
Monitoring, updates and patches	Included, for as long as the service runs	First 6 months; AMC on request after that
Installation and setup	Included	Included
Training	Included	Included
Devices (section 9)	School buys and owns - its only one-time cost	School buys and owns
Cost to the school	On request (monthly, all-inclusive)	On request (one-time)

Under **Option A** the hardware in section 9 is the school's only one-time cost - no separate development, installation or training fee - and the platform stays hosted, monitored, updated and supported throughout. **Option B** hands over a system the school owns outright, with six months of support; after that the school runs it and pays its own hosting, SMS and SIM costs.

Payment Schedule (Suggested)

Option	Milestone	Payment
B - Fixed (one-time)	Proposal approval and pilot start	30%
	Pilot successfully completed	30%
	Phase 1 live (attendance + parent app)	25%
	Full go-live (substitution + buses)	15%
A - Managed (monthly)	Billed monthly in advance from the month work begins. Minimum term and notice period are set in the service agreement	Monthly

10. Return on Investment

Why this investment pays for itself

Time Saved

Activity	Calculation	Saved per year
Roll call	13 classes x 5 min x 220 days	~240 teacher hours
Substitute planning	30 min x 220 days	~110 coordinator hours
Attendance and payroll reports	~1 day per month	~12 working days
Parent phone enquiries	Handled by app alerts	Significant office time

At a conservative Rs. 300 per teacher-hour, the recovered teaching time alone is worth about **Rs. 72,000 every year**, before the office and coordinator time is counted.

Optional Cost Recovery

Many schools charge a small annual technology and transport-safety fee. For example, **500 students x Rs. 300 per year = Rs. 1.5 lakh per year** - enough to cover the full running cost several times over, and a meaningful part of the hardware in the first year. The decision rests entirely with management.

Benefits That Go Beyond Numbers

Stakeholder	Benefit
Parents	Peace of mind: real-time updates on their child's safety
Students	Safer journeys, no attendance queues, more time for learning
Teachers	No registers or roll calls; substitution duties known in advance
Principal	Complete, live control of the school on one screen
Management	A clear admissions advantage, a stronger reputation and audit-ready records

How We Will Measure Success

Metric	Target
Daily attendance captured automatically	99%+ of students and staff
Gate entry time for all students	Under 12-15 minutes
Substitutes assigned before first period	100% of absences
Parent alert delivery time	Under 1 minute from scan
System uptime	99.5%+

11. Implementation, Support & Risk Management

A careful, phased rollout

Implementation Timeline

Phase	Scope	Duration
Pilot	1 gate lane, 1 bus and the staff terminal, tested with 100-150 students	2-3 weeks
Phase 1	Staff and teacher attendance, student gate attendance, parent app	1.5-2 months
Phase 2	Auto-substitution, Principal dashboard and reports	3-4 weeks
Phase 3	Tracking and safety alerts on all 5 buses	1 month
Training	Principal, teachers, office staff and drivers	With every phase

Pilot Success Criteria

- 95%+ of cards read correctly at walking pace.
- Parents receive alerts within 1 minute of a scan.
- Bus location and boarding scans recorded accurately for a full week.
- Positive feedback from the Principal, teachers and pilot parents.

Support & Maintenance (Proposed)

Priority	Example	Response time
Critical	Gate system down, all buses offline	[Same day]
High	Single device failure, notifications delayed	[Within 24 hours]
Normal	Report changes, feature requests	[3-5 working days]

- 24x7 automated monitoring of every device and the server.
- Regular software updates and security patches.
- Immediate replacement from spare stock.

Risks & Mitigation

Risk	Mitigation
Internet or power outage	Offline storage on all devices; UPS and backup 4G internet
Lost or damaged cards	Instant blocking; replacement cards kept in stock
Device failure	Spare devices on site; manufacturer warranty
Low parent adoption of the app	Onboarding sessions, SMS fallback for critical alerts
Privacy concerns	Consent-based, minimal data; DPDP Act compliance; data stays in India

12. FAQ, Terms & Approval

Common questions and next steps

Frequently Asked Questions

Q. What if a child forgets the card?

The class teacher marks attendance manually in the teacher app in a few seconds; the parent is still notified.

Q. Can a child use a friend's card?

Every scan captures a photo, so misuse is easy to detect and review.

Q. Does the system work without internet?

Yes. All devices store data locally and sync automatically when the connection returns.

Q. Do parents need a smartphone?

The app is recommended; critical alerts (absence, emergency) can also be sent by SMS.

Q. Is the children's data safe?

Yes. Data is encrypted, access is role-based, it is hosted in India, and it complies with the DPDP Act, 2023.

Q. We may grow past 500 students. Will this still work?

Yes. The gate is built with two lanes and spare capacity; growth to about 1,200 students needs only extra cards, and a third lane beyond that.

Q. Can we add fees, exams or library later?

Yes. The platform is modular and can be extended in future phases.

Assumptions & Terms

- Figures are sized for **500 students and 5 buses**; a change in either is re-costed before the order.
- Option A is an all-inclusive monthly fee covering: development, installation, training, hosting, SMS, bus SIMs, monitoring, updates and support. The school's only one-time cost is the hardware in section 9.
- Option B is a one-time fee covering development, installation, training and six months of support. Annual maintenance after that period is quoted on request, and running costs are the school's from handover.
- **Moving from Option A to ownership:** a school on the monthly service may take ownership at any time by paying the one-time fee in full. The monthly fees already paid cover the service delivered in those months and are not set off against the one-time fee.
- **Software ownership:** the platform remains the product of ASG Tech Solution. Under Option A the school uses it as a service; under Option B the school receives a perpetual licence for its own use, with the source code and the deployment setup. The software may not be resold, sub-licensed or passed to another organisation.
- Devices are purchased and owned by the school under both options.
- Hardware figures are estimates based on September 2026 market prices; exact amounts follow vendor quotations.
- Hardware warranty as per the manufacturer (minimum one year).
- The school's own broadband is its cost under both options. Cloud hosting, bus SIMs and SMS are included under Option A and borne by the school under Option B.
- Replacement of lost or damaged cards is charged to the school or parents.
- Full rollout and bulk orders proceed only after a successful pilot.
- Additional modules (fees, examinations, library) will be scoped separately.
- This proposal is valid for 30 days from the date of issue.

Responsibilities of the School

- Provide complete data for students, teachers and staff.
- Provide power and internet at the gate and staff room.
- Permit installation in buses (including permission from contractors, where applicable).
- Nominate one staff member for daily tasks (issuing cards, adding new students).
- Collect parental consent forms.

Next Steps

Step	Action	Owner
1	Proposal discussion with management	School + ASG Tech Solution
2	Confirm student and bus count, and school timings	School
3	Approve pilot and pilot budget (approx. Rs. 50,000 - 1.1 L)	School
4	Run pilot with demo devices (2-3 weeks)	ASG Tech Solution
5	Pilot review and final order for full rollout	School + ASG Tech Solution

We look forward to helping [School Name] become a safer, smarter school for every student, parent and teacher.

Approval

For [School Name] Signature: _____ Name: _____ Designation: _____ Date: _____	For ASG Tech Solution Signature: _____ Name: _____ Designation: _____ Date: _____
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