FEATURE PRIORITIZATION VNEXT - [AURORA SYSTEM]

1. INTRODUCTION

The Aurora System was developed to address the growing demand for safe, efficient, and environmentally sustainable sanitization in industrial environments. The first generation of Aurora successfully integrated standard ozone generation technology with basic automation, enabling customers across food processing, pharmaceuticals, and logistics to meet strict sanitization standards while reducing downtime and operational costs.

After the first generation of Aurora was design, it has been concluded that there's a need to expand Aurora's capabilities. The next version of the system, referred to in this document as Aurora vNext, will focus on closing identified gaps, strengthening safety mechanisms, and delivering advanced features that improve efficiency, usability, and long-term value.

This document defines and prioritizes the key features under consideration for Aurora vNext. The intent is to provide a clear, evidence-based framework that will guide product management, engineering, and compliance teams in making development decisions.

1.1 PURPOSE OF THIS DOCUMENT

- To capture and define proposed features for the next release of Aurora.
- To prioritize features based on safety, compliance, customer value, and technical feasibility.
- To align stakeholders (engineering, product management, compliance officers, and executives) around a shared roadmap.
- To serve as a reference point for future audits, development planning, and investment discussions.

1.2 AUDIENCE

This document is intended for:

- Product Managers: to guide roadmap planning and resource allocation.
- Engineering Teams: to understand technical priorities and dependencies.
- Compliance & Safety Officers: to ensure features align with regulatory obligations.
- Executives & Investors: to validate that the product roadmap supports business growth and market leadership.

1.3 SCOPE

The document focuses on features planned for Aurora vNext (Aurora v2.0 and incremental updates). These include:

- Safety-critical improvements,
- High-value enhancements based on customer demand, and
- Future-facing features with innovation potential.

1.4 EXCLUSIONS

This document does not cover:

- Experimental R&D concepts without immediate feasibility,

- Long-term roadmap items reserved for Aurora v3.0+, or
- Internal engineering details beyond the feature level (covered in design specifications).

2. CURRENT SYSTEM OVERVIEW

2.1 SUMMARY OF EXISTING CAPABILITIES

The current release of the Aurora Industrial Ozone Sanitization System provides a robust, fully functional platform that integrates advanced ozone generation with intelligent monitoring and control. Its hardware and software subsystems are engineered for industrial-grade reliability and compliance.

2.1.2 Hardware Capabilities

- High-Efficiency Ozone Generator: Capable of achieving rapid sanitization cycles with adjustable concentration levels.

- Environmental Sensors: Continuous monitoring of ozone concentration, temperature, and humidity ensures consistent sanitization outcomes.

- Safety Interlocks: Built-in fail-safe mechanisms automatically halt ozone generation in unsafe conditions.

- Optimized Airflow System: Designed for even ozone distribution across enclosed spaces.

2.1.3 Software Capabilities

- Centralized Dashboard: Real-time monitoring of system performance and sanitization cycles.

- Automated Scheduling: Allows facilities to program sanitization at specific intervals, reducing manual oversight.

- Data Logging: Generates historical records of sanitization events for internal quality assurance.

- Remote Management (Basic): Operators can access limited system controls through a secure remote interface.

2.1.4 Safety and Compliance

- Adheres to key international ozone safety standards (OSHA, EPA, ISO).

- Includes emergency shutoff protocols triggered by unsafe ozone levels.

- Provides basic compliance reporting functionality for audits.

2.2 KNOWN LIMITATIONS

While the current Aurora system meets its primary objectives, several limitations and gaps have been identified through operational use and customer feedback:

2.2.1 Regulatory Reporting Limitations

- Compliance reporting is currently manual and requires exporting raw logs.

- No built-in automatic report generation for OSHA/EPA/ISO audits.

2.2.2 Remote Management Constraints

- Remote access is functional but limited to monitoring and basic control.

- Lacks full mobile integration (iOS/Android) and advanced role-based access.

2.2.3 Single-Zone Operation

- Current version supports sanitization of one area at a time.
- Multi-zone or facility-wide orchestration is not yet available.

2.2.4 Energy Optimization

- Ozone generation cycles are efficient but not dynamically optimized for energy savings (e.g., no load balancing or off-peak scheduling).

2.2.5 Predictive Intelligence

- System operates on fixed parameters and real-time sensor data.
- No machine learning or adaptive optimization to further reduce cycle times or anticipate maintenance.

2.2.6 User Experience Gaps

- Dashboard is functional but lacks intuitive visualization for non-technical users.
- No mobile app or push notifications for sanitization status, safety alerts, or maintenance reminders.

2.3 MARKET AND OPERATIONAL FEEDBACK

Feedback from early adopters and pilot deployments highlights both strengths and opportunities for improvement:

- Strengths reported: reliability, ease of installation, strong safety features, and compliance readiness.
- Requested enhancements: more advanced compliance tools, better remote monitoring, mobile accessibility, and support for multi-zone facilities.

3. PRIORITIZATION FRAMEWORK

To ensure that the next version of the Aurora System delivers maximum value while remaining feasible and compliant, feature prioritization is guided by a structured evaluation framework. This framework balances safety, compliance, customer value, technical feasibility, and ROI to determine which features must be delivered first.

3.1 CRITERIA FOR PRIORITIZATION

Each proposed feature is evaluated against the following criteria:

3.1.1 Safety & Compliance Impact

- Does the feature address regulatory requirements (OSHA, EPA, ISO, FDA)?
- Does it improve operator or environmental safety?
- Will its absence risk certification or legal compliance?

3.1.2 Customer Value & Market Demand

- How strongly are customers requesting this feature?
- Does it solve critical pain points identified during pilot testing or user feedback?
- Will it significantly improve adoption or satisfaction?

3.1.3 Operational Efficiency Gains

- Does it reduce sanitization cycle times or energy use?
- Does it simplify operation, maintenance, or training?
- Will it reduce downtime or labor requirements?

3.1.4 Technical Feasibility & Complexity

- Can it be realistically implemented with current technology?
- Are there hardware dependencies or supply chain risks?
- What level of R\&D effort is required (low/medium/high)?

3.1.5 Cost vs. ROI

- What is the development cost (time, budget, resources)?
- What measurable returns (savings, revenue, efficiency) does it deliver?
- Will it strengthen Aurora's market competitiveness and justify investment?

3.2 SCORING SYSTEM

To make prioritization transparent, features are scored on a 1-5 scale for each criterion:

Score	Definition
1	Minimal impact or value
2	Low importance, limited effect
3	Moderate value, optional improvement
4	High importance, strong benefit
5	Critical to safety, compliance, or market success

- Weighted Scoring (optional): Safety & compliance may carry more weight (e.g., 40%) than efficiency (20%), depending on business priorities.
- Aggregate Score: The sum (or weighted average) determines overall feature priority.

3.3 PRIORITIZATION TIERS

Based on aggregate scoring, features are grouped into three tiers:

3.3.1 Tier 1 - Critical / Must-Have

- Directly tied to safety, compliance, or essential customer demand.
- Required for regulatory approval or to remain competitive.
- Must be included in the next release (Aurora v2.0).

3.3.2 Tier 2 - High-Value / Should-Have

- Strongly beneficial but not blocking compliance or immediate adoption.
- Increases efficiency, usability, or differentiation.
- Candidates for phased release (Aurora v2.x).

3.3.3 Tier 3 - Future Consideration / Nice-to-Have

- Innovative or experimental features with long-term potential.
- May require significant R&D, new technologies, or unproven demand.
- Planned for future roadmap (Aurora v3.0+).

4. PROPOSED FEATURES FOR AURORA VNEXT

4.1 TIER 1 - CRITICAL / MUST-HAVE

4.1.1 Redundant Multi-Point Ozone Leak Detection

4.1.2 Addition of a Second Ozone Generator for Continuous Sanitization

Description

Aurora operates with a single generator, which overheats after continuous use. This forces downtime periods while the unit cools, leading to interruptions in ozone production. As a result, we are unable to maintain a stable and consistent ozone concentration within the treated environment. The proposal is to add a second generator and configure them to operate alternately. This setup would allow one generator to run while the other cools, ensuring uninterrupted 24/7 operation.

Business Justification

- Operational Continuity: The current downtime reduces sanitization efficiency and leaves gaps in treatment, which may compromise the quality and reliability of our sanitization process.

- Efficiency & Compliance: Many applications of ozone sanitization require stable and consistent ozone levels to meet safety, quality, or regulatory standards. Fluctuations in ozone concentration increase the risk of non-compliance.

- Asset Protection: Running one generator continuously to the point of overheating accelerates wear and shortens its lifespan. Alternating two generators will extend equipment life and reduce maintenance and replacement costs.

- Reputation & Reliability: Delivering consistent results builds confidence in our sanitization process-both internally and with clients. A more stable system reinforces trust in our operations.

Expected Impact

- Stable Ozone Concentration: With alternating generators, ozone levels will remain steady and controlled, improving the effectiveness of sanitization.

- Increased Uptime: Continuous 24/7 operation without forced cooling downtime maximizes production and reliability.

- Cost Savings: Longer equipment life, fewer breakdowns, and lower maintenance costs compared to overburdening a single generator.

- Scalability: The dual-generator system provides a foundation for future upgrades, automation, or even expansion to higher-capacity sanitization needs.

- Regulatory Confidence: Consistent ozone levels mean easier documentation and proof of compliance, reducing risks of audit issues or penalties.

Technical Considerations

- Generator Integration: The second generator will be installed in parallel and configured to alternate with the first on a timed or load-based cycle.

- Control System Update: Minor programming or control logic adjustments will be required to ensure seamless switching between generators.

- Safety & Monitoring: Sensors should be calibrated to monitor and regulate ozone levels accurately across the alternating cycle, ensuring no overshoot or undershoot.
- Power & Cooling: Electrical and cooling requirements will be reviewed to confirm system stability when alternating between units.
- Maintenance Protocols: With two generators in place, maintenance can be scheduled without disrupting production.

4.1.3 PSA Oxygen Concentrator Monitoring Sensor

4.1.4 Control PCB Infinite-Scale Modular Architecture

4.1.5 Power Distribution Lines Current/Voltage/Power Monitoring Sensors

4.1.6 DIN Compatible PCB Modules

4.1.7 Event Logging with Timestamping

4.1.8 Internal Security Thermal/Humidity Sensors

4.1.9 Ambient Air Quality Monitoring Humidity/Temperature/VOCs

4.1.10 Optical Technology Inline Ozone Monitoring Sensor

4.1.1 Advanced Multi-Point Ozone Leak Detection

Description: Integration of a distributed network of ozone sensors throughout the facility, providing redundancy and faster detection of abnormal ozone levels.

Business Justification: Ensures worker safety, complies with stricter OSHA and EU workplace exposure standards, and reduces liability risks.

Expected Impact: Immediate hazard mitigation, improved trust with safety officers, and faster certification approvals.

Technical Considerations: Requires integration with existing safety interlocks and real-time shutdown logic.

4.1.2 Automated Compliance Reporting Dashboard

Description: A software feature that generates audit-ready compliance reports automatically (OSHA/EPA/ISO) with timestamps, cycle logs, and sensor data.

Business Justification: Reduces administrative workload, eliminates manual reporting errors, and streamlines audits for regulated industries (food, pharma, healthcare).

Expected Impact: Accelerated regulatory approvals, stronger appeal to compliance-heavy customers.

Technical Considerations: Secure data storage, export to PDF/CSV, and integration with enterprise systems.

4.1.3 Multi-Zone Sanitization Control

Description: Enables a single Aurora unit (or cluster of units) to independently manage multiple sanitization zones with separate cycles and ozone levels.

Business Justification: Large facilities can reduce equipment costs by centralizing control, while

still ensuring tailored sanitization per area.

Expected Impact: Reduced total cost of ownership (TCO), increased scalability, stronger competitive positioning.

Technical Considerations: Requires upgrades to airflow distribution, zone-specific sensors, and advanced scheduling software.

4.2 TIER 2 - HIGH-VALUE / SHOULD-HAVE

4.2.1 AI-Powered Sanitization Cycle Optimization

Description: Machine learning algorithms analyze past sanitization data, environmental factors, and pathogen profiles to optimize cycle duration and ozone dosage.

Customer/Market Driver: Growing demand for intelligent, self-optimizing industrial equipment under Industry 4.0 standards.

Efficiency/Performance Gain: Up to 20% faster sanitization cycles with reduced energy consumption.

Dependencies: Requires historical data logging and cloud or edge-based AI models.

4.2.2 Mobile App Integration (iOS/Android)

Description: Mobile application for operators and managers to monitor, control, and receive alerts from Aurora systems in real time.

Customer/Market Driver: Increased demand for mobile accessibility and remote management in industrial environments.

Efficiency/Performance Gain: Faster response to anomalies, improved operator convenience.

Dependencies: Secure authentication, cloud connectivity, and push notification services.

4.2.3 Energy Optimization Mode

Description: Intelligent scheduling system aligns sanitization cycles with off-peak energy hours and adjusts ozone generation based on facility load.

Customer/Market Driver: Rising energy costs and sustainability initiatives.

Efficiency/Performance Gain: 10-15% reduction in electricity usage.

Dependencies: Integration with facility energy management systems (EMS).

4.3 TIER 3 - FUTURE CONSIDERATION / NICE-TO-HAVE

4.3.1 Voice Command Support

Description: Hands-free control of sanitization cycles and safety checks via voice recognition.

Innovation Potential: Enhances usability for operators wearing gloves or working in restricted environments.

Risks/Uncertainties: Accuracy in noisy industrial environments; operator training requirements.

4.3.2 Augmented Reality (AR) Maintenance Assistant

Description: AR interface for technicians to visualize system diagnostics, guided repair steps, and sensor placement using AR glasses or mobile devices.

Innovation Potential: Reduces service time, improves training for new technicians, and lowers maintenance costs.

Risks/Uncertainties: Hardware availability (AR headsets), software integration complexity.

4.3.3 Blockchain-Backed Audit Trail

Description: Immutable, tamper-proof logging of sanitization cycles and compliance data on a blockchain ledger.

Innovation Potential: Appeals to highly regulated industries (e.g., pharma, food exports) that require proof of compliance integrity.

Risks/Uncertainties: Scalability and cost of blockchain infrastructure.

5. FEATURE IMPACT ANALYSIS

To ensure that the proposed features for Aurora vNext are aligned with both customer needs and business goals, each feature has been evaluated across five critical dimensions:

1. Customer Value - degree to which the feature addresses user pain points or enhances experience.
2. Compliance Impact - contribution toward meeting or exceeding regulatory standards (OSHA, EPA, ISO, FDA).
3. Development Effort - estimated complexity and resource requirements (low/medium/high).
4. ROI Potential - ability to generate measurable cost savings, efficiency gains, or new revenue streams.
5. Priority Score - overall ranking derived from weighted scoring across the above factors.

5.1 COMPARATIVE FEATURE ANALYSIS TABLE

Feature	Tier	Customer Value	Compliance Impact	Dev Effort	ROI Potential	Priority Score
Enhanced Ozone Leak Detection	1	Very High	Critical	Medium	High	95/100
Regulatory Reporting Dashboard	1	High	Critical	Medium	High	92/100
Multi-Zone Sanitization Control	1	Very High	High	High	Very High	89/100
AI-Powered Cycle Optimization	2	High	Medium	High	High	82/100
Mobile App Integration	2	Medium	Low	Medium	Medium	74/100
Energy Optimization Mode	2	High	Medium	Low	High	80/100
Voice Command Support	3	Low	None	Medium	Low	55/100
AR Maintenance Assistant	3	Medium	Low	High	Medium	60/100

Feature	Tier	Customer Value	Compliance Impact	Dev Effort	ROI Potential	Priority Score
Blockchain Audit Trail	3	Medium	High	High	Medium	65/100

5.2 NARRATIVE ANALYSIS

5.2.1 Tier 1 Features (Critical / Must-Have):

- Enhanced Ozone Leak Detection delivers the highest safety and compliance value. By reducing operator exposure risk and aligning with OSHA/EPA requirements, it is non-negotiable for Aurora vNext.

- Regulatory Reporting Dashboard addresses one of the strongest customer pain points: audit preparation. Automating compliance logs reduces labor costs and improves Aurora's attractiveness to highly regulated industries.

- Multi-Zone Sanitization Control increases Aurora's scalability and allows customers to manage multiple areas simultaneously, driving efficiency and reducing downtime across entire facilities.

5.2.2 Tier 2 Features (High-Value / Should-Have):

- AI-Powered Cycle Optimization positions Aurora as an industry leader in intelligent sanitization. While development effort is high, the payoff is significant in reduced cycle time and improved energy efficiency.

- Mobile App Integration provides convenience but has limited compliance impact. It supports customer adoption and modernizes Aurora's image.

- Energy Optimization Mode directly supports sustainability and cost reduction goals, making it highly attractive for ESG-driven clients.

5.2.3 Tier 3 Features (Future Considerations):

- Voice Command Support may improve usability in sterile environments but adds marginal business value.

- AR Maintenance Assistant has potential for training and service efficiency, but high technical complexity suggests it should be deferred.

- Blockchain Audit Trail could differentiate Aurora in highly regulated markets (e.g., pharma, medical), though development effort and unclear customer demand make it a long-term consideration.

5.3 KEY TAKEAWAYS

- Immediate Priority: Safety and compliance features (Tier 1) are essential for both regulatory approval and market adoption.

- Strategic Value: Tier 2 features should be selectively implemented to balance innovation with development feasibility.

- Innovation Pipeline: Tier 3 features provide long-term differentiation but should not delay near-term releases.

6. DEPENDENCIES AND RISKS

The successful implementation of the next-generation Aurora features depends on a combination of technical, regulatory, and resource-related factors. Identifying these dependencies early ensures realistic planning, mitigates project risks, and improves the likelihood of on-time delivery.

6.1 TECHNICAL DEPENDENCIES

6.1.1 Sensor Technology Availability

- Advanced ozone and multi-gas sensors required for enhanced leak detection must be sourced from reliable suppliers with proven industrial certifications.

6.1.2 Cloud Infrastructure

- Remote monitoring and compliance reporting features depend on robust, secure cloud hosting. Service-level agreements (SLAs) must guarantee uptime and data integrity.

6.1.3 Software-Hardware Synchronization

- New AI-driven cycle optimization requires close integration between embedded firmware and the central monitoring dashboard. Development timelines may be affected by firmware stability.

6.1.4 Third-Party APIs and Standards

- Compatibility with industrial communication protocols (Modbus, MQTT, OPC-UA) is necessary to integrate with existing facility management systems.

6.2 REGULATORY DEPENDENCIES

6.2.1 Evolving Ozone Safety Standards

- Any tightening of OSHA, EPA, or EU regulations on permissible ozone exposure levels may require design modifications.

6.2.2 Compliance Documentation

- Automated compliance reporting features must align with ISO 9001, ISO 14001, and GMP (Good Manufacturing Practice) guidelines.

6.2.3 Market-Specific Requirements

- Features intended for healthcare and pharmaceutical customers may need additional validation (FDA, EMA, WHO standards).

6.3 RESOURCE AND SUPPLY CHAIN DEPENDENCIES

6.3.1 Component Lead Times

- High-quality sensors, industrial-grade power supplies, and electronic components may face global supply shortages.

6.3.2 Specialized Engineering Talent

- AI/ML feature development requires dedicated software engineers with domain expertise in industrial IoT.

6.3.3 Manufacturing Capacity

- Scaling production of modular hardware requires vetted manufacturing partners with capacity for volume while maintaining ISO-certified processes.

6.4 RISKS

6.4.1 Technical Risks

- Integration of AI optimization could introduce unexpected system complexity, increasing testing cycles.
- Cloud connectivity issues could impact customer confidence in remote monitoring features.

6.4.2 Regulatory Risks

- Delay in obtaining certifications (CE, UL, FCC) could postpone market launch.
- Misalignment with future safety regulations may necessitate retroactive hardware redesign.

6.4.3 Operational Risks

- Overlapping feature development streams may create resource bottlenecks.
- Inadequate operator training for new features could reduce adoption rates.

6.4.4 Market Risks

- Competitors may fast-track similar capabilities, eroding Aurora's differentiation if release timelines slip.
- Customer hesitation to adopt cloud-connected systems due to cybersecurity concerns.

6.5 MITIGATION STRATEGIES

6.5.1 Redundancy Planning

- Dual sourcing for critical components to reduce supply chain risk.

6.5.2 Incremental Development

- Phased rollouts of AI and compliance features to validate stability before full deployment.

6.5.3 Regulatory Alignment

- Continuous engagement with regulatory bodies and early third-party pre-certification testing.

6.5.4 Customer Engagement

- Early pilot programs with key clients to validate usability, compliance reporting, and ROI.

6.5.5 Cybersecurity Investment

- End-to-end encryption, role-based access control, and penetration testing for cloud features.

7. ROADMAP ALIGNMENT

Aurora's feature prioritization is tightly aligned with the product roadmap to ensure a balance between regulatory compliance, market competitiveness, and customer value. The roadmap outlines a phased approach, where critical features are delivered first to strengthen safety and compliance, followed by high-value enhancements that improve usability and efficiency, and finally, long-term innovations that reinforce Aurora's leadership in industrial sanitization.

7.1 SHORT-TERM GOALS (AURORA V2.0)

Timeline: 6-12 months

Focus: Deliver must-have, compliance-driven, and customer-critical features.

- Enhanced Ozone Leak Detection: Multi-point sensors and redundancy for immediate shutdown.
- Regulatory Reporting Dashboard: Automated OSHA/EPA/ISO-ready audit reports.
- Multi-Zone Sanitization Control: Independent cycle control for multiple rooms/zones.
- Improved User Interface: Streamlined dashboard for operators with simplified workflows.

Impact: Positions Aurora as a compliance-ready, industrial-grade solution that addresses the most pressing safety and regulatory needs.

7.2 MEDIUM-TERM GOALS (AURORA V2.X UPDATES)

Timeline: 12-24 months

Focus: Introduce high-value features that enhance efficiency, reduce costs, and improve the user experience.

- AI-Powered Cycle Optimization: Machine learning models that minimize sanitization time while maximizing kill rates.
- Energy Optimization Mode: Intelligent scheduling aligned with off-peak energy hours.
- Mobile App Integration: Secure iOS/Android applications for monitoring and remote control.
- Predictive Maintenance Alerts: Proactive detection of wear-and-tear using sensor data trends.

Impact: Delivers tangible cost savings and operational improvements while increasing customer adoption and satisfaction.

7.3 LONG-TERM VISION (AURORA V3.0 AND BEYOND)

Timeline: 24+ months

Focus: Explore innovative, market-differentiating features that anticipate industry evolution.

- Blockchain-Backed Compliance Logs: Tamper-proof audit trail for regulated industries (pharma, healthcare, food).
- AR Maintenance Assistant: Augmented reality tools for guided repair and training.
- Voice Command Operation: Hands-free operation in controlled or cleanroom environments.

- Integration with Smart Factory Systems: Seamless interoperability with Industry 4.0 platforms (ERP, MES, SCADA).

Impact: Reinforces Aurora's position as a future-ready sanitization system, not just meeting today's standards but setting tomorrow's benchmarks.

7.4 CROSS-REFERENCE TO ROADMAP DOCUMENTS

This feature prioritization aligns directly with the Upgrade_Roadmap.pdf in the 10_Future_Planning folder. The roadmap document expands on:

  - Specific release timelines and milestones.
  - Resource allocation and budgetary planning.
  - Pilot programs and validation phases.
  - Certification and regulatory approval timelines.

8. CONCLUSION

The Aurora System is entering a pivotal stage in its evolution. Through this prioritization process, we have identified the features that will deliver the highest impact in safety, compliance, and customer value while ensuring technical feasibility and strong ROI.

- Tier 1 features such as enhanced leak detection, automated compliance reporting, and multi-zone sanitization control form the backbone of the next release. These capabilities address urgent customer needs, strengthen regulatory alignment, and directly differentiate Aurora from competing solutions.
- Tier 2 features including AI-driven cycle optimization, mobile integration, and energy-saving modes will reinforce operational efficiency and broaden appeal across multiple industries.
- Tier 3 innovations, while not immediate priorities, demonstrate Aurora's long-term vision for leadership in industrial sanitization technology.

By following this structured prioritization, Aurora is positioned to:

- Strengthen compliance readiness for OSHA, EPA, and ISO audits.
- Deliver measurable cost savings to customers through automation and energy optimization.
- Expand scalability and market reach, making Aurora suitable for facilities of all sizes.
- Differentiate strategically against both premium and low-cost competitors.

The next steps are clear: finalize design specifications for Tier 1 features, allocate resources for development and pilot testing, and align the release roadmap with customer commitments. With these priorities in place, Aurora is not only improving its technical capabilities but also reinforcing its role as a trusted, future-ready platform for safe, sustainable, and intelligent industrial sanitization.

9. APPENDICES

9.1 APPENDIX A. CUSTOMER FEEDBACK SUMMARIES

Aurora's initial deployments and pilot tests provided valuable feedback from early adopters across multiple industries:

9.1.1 Food Processing Plant (Client A)

Feedback: Sanitization cycles effective but required manual scheduling.

Requested Features: Automated cycle scheduling, energy usage monitoring.

9.1.2 Pharmaceutical Manufacturer (Client B)

Feedback: Strong demand for compliance documentation to simplify audits.

Requested Features: Built-in regulatory reporting (ISO 13485, FDA CFR Part 11).

9.1.3 Hospital Cleanroom (Client C)

Feedback: High safety expectations, concerns about ozone exposure.

Requested Features: Multi-point ozone leak detection, real-time mobile alerts.

9.1.4 Cold Storage Logistics (Client D)

Feedback: Ozone coverage uneven in large warehouse zones.

Requested Features: Multi-zone control with independent sensors.

Key Insight: Customers consistently request automation, compliance reporting, safety enhancements, and multi-zone scalability.

9.2 APPENDIX B. COMPETITOR FEATURE BENCHMARKING

An analysis of leading competitors highlights opportunities for Aurora's differentiation:

Competitor	Key Features	Strengths	Weaknesses vs Aurora
Competitor A (UV-C System)	UV sterilization, automated cycles	Fast sanitization in line-of-sight	Limited penetration, high lamp maintenance, no chemical-free certification
Competitor B (Ozone System)	Basic ozone generation, manual timers	Low upfront cost	No compliance reporting, poor safety controls, limited scalability

Competitor	Key Features	Strengths	Weaknesses vs Aurora
Competitor C (Chemical Disinfectant Provider)	Broad disinfection agents, bundled service contracts	Widely adopted, strong regulatory approval	Chemical waste, higher recurring cost, manual labor-intensive

Key Differentiation for Aurora: Combining ozone-based eco-friendliness, advanced automation, and audit-ready compliance tools-none of which are fully addressed by current competitors.

9.3 APPENDIX C. REGULATORY REFERENCES

Aurora vNext features must comply with a range of industrial, environmental, and safety standards. Key references include:

9.3.1 Occupational Safety and Health Administration (OSHA)

- 29 CFR 1910.1000 Permissible exposure limits for ozone (0.1 ppm, 8-hour TWA).

9.3.2 Environmental Protection Agency (EPA)

- Clean Air Act requirements for ozone use in industrial applications.

9.3.3 International Organization for Standardization (ISO)

- ISO 9001 Quality management systems.
- ISO 14001 Environmental management systems.
- ISO 13485 Medical devices (if targeting healthcare).

9.3.4 Food and Drug Administration (FDA)

- CFR Title 21 Part 11 Electronic records and signatures for compliance reporting.

9.3.5 European Union Directives

- CE Marking requirements for safety and performance.
- REACH and RoHS for materials compliance.

Key Insight: Built-in compliance logging and reporting will be a Tier 1 feature to meet these global regulatory demands.

9.4 APPENDIX D. GLOSSARY

- Ozone (O3): A triatomic molecule of oxygen with strong oxidizing properties, used for sterilization.
- TWA (Time-Weighted Average): Regulatory measure of average exposure over a defined period (e.g., 8 hours).
- HAI (Healthcare-Associated Infection): Infections acquired in healthcare settings that sanitization seeks to prevent.
- Multi-Zone Control: System capability to independently manage sanitization cycles across different facility areas.

- Predictive Maintenance: Use of data and AI to anticipate system failures before they occur.
- Audit Trail: A tamper-proof record of operational and compliance-related events.
- SLA (Service Level Agreement): Formalized customer support and performance guarantees.