

PLATFORM SPECIFICATION

1. PRODUCT DEFINITION

The Platform or Clarity is an enterprise-grade industrial operating system that serves as the digital backbone for asset-intensive operations across heavy industries. At its foundation, Clarity utilizes a three-dimensional Model - a high-fidelity spatial representation of physical facilities and equipment - to operationally integrate and unify critical data, operational workflows, technical drawings, and documentation within a unified spatial context.

The Platform enables industrial organizations to transition from fragmented, siloed information systems to a spatially aware, data-driven operational framework. By anchoring all information to physical asset locations within the Model, Clarity provides contextualized access to equipment data, maintenance records, safety protocols, technical documentation, and real-time operational intelligence - accessible through both web-based desktop interfaces and a mobile application (iOS).

Clarity is specifically designed for heavy industrial environments including but not limited to cement manufacturing, mining operations, oil and gas facilities, chemical processing plants, power generation, and other asset-intensive industries where operational technology (“OT”) integration, equipment reliability, worker safety, engineering planning and regulatory compliance are mission-critical.

2. PLATFORM ARCHITECTURE & INTEGRATED MODULES

Clarity operates as a cloud-native SaaS platform utilizing industry-standard security protocols, scalable infrastructure, and API-first design principles. The Platform supports integration with existing enterprise systems including ERP, CMMS, EAM, and industrial control systems through RESTful APIs and standard industrial protocols.

The architecture ensures high availability, disaster recovery capabilities, and compliance with applicable data residency requirements through geographically distributed infrastructure.

2.1 Integrated Modules

The Platform comprises integrated functional modules organized into the following clusters, each designed to address specific operational requirements while maintaining seamless data flow:

Cluster	Module Name
Digital Twin & Documents	Digital Twin Core Equipment Documents
Maintenance & Operations	Maintenance Excellence Field Operations
Engineering & Projects	Measurements & Areas
Platform (Foundation)	Integration Administration
Mobile Applications	Clarity Mobile (Augmented Reality) Clarity Capture

3. MODULE DESCRIPTIONS

3.1 Digital Twin & Documents Cluster

3.1.1 Digital Twin Core

The Digital Twin Core serves as the foundational layer of the Platform, providing spatial visualization and contextualization capabilities that underpin all other modules. This module enables comprehensive asset management through three-dimensional representation of the facility and measurement tools.

Key Capabilities:

- **Visual Asset Management:** Interactive 3D navigation through facility models with high-fidelity spatial representation of all physical assets, infrastructure, and operational areas.
- **Reality Model Integration:** Support for multiple data capture methodologies including laser scanning, photogrammetry and imports to create accurate digital representations.
- **Engineering Measurements:** Precision measurement tools for distance, height, area and angle calculations directly within the 3D environment for engineering analysis and collaborative planning.
- **Equipment Localization:** Spatial indexing and positioning of all equipment assets within the facility model for rapid identification and navigation

3.1.2 Equipment

The Equipment module provides comprehensive asset registry and equipment master data management capabilities, serving as the authoritative source for all physical asset and equipment information across the facility. This module maintains the digital catalogue of equipment assets that can be spatially positioned within the Digital Twin Core.

Key Capabilities:

- **Equipment Register & Tagging:** Comprehensive equipment database with unique asset identifiers, hierarchical classification structures, and parent-child relationships for complex equipment assemblies. Unique visual asset tags on 3D model allowing access to information
- **Master Data Management:** Centralized repository for technical specifications, nameplate data, manufacturer information, model numbers, serial numbers, and commissioning records.
- **Custom Attribute Framework:** Flexible metadata schema allowing customer-defined fields, categories, and classification systems to accommodate industry-specific and facility-specific requirements.
- **Equipment Change History:** Comprehensive tracking of all modifications, repairs, upgrades, replacements, and configuration changes to assets over time, maintaining a complete audit trail of equipment evolution from initial installation through decommissioning.
- **Spatial Integration:** Bi-directional linkage between equipment records and their physical locations within the Digital Twin Core for seamless navigation between asset data and 3D visualization.

3.1.3 Documents

The Document module provides intelligent organization, retrieval, and version control of technical documentation with AI-enhanced classification and search capabilities, ensuring that the right information reaches the right personnel at the right time.

Key Capabilities:

- **Centralized Document Access:** Unified repository for technical / engineering drawings, P&IDs, operating procedures, safety data sheets, compliance documentation, and vendor manuals with role-based access controls.
- **Advanced Filtering and Sorting:** Multi-criteria search and filtering by document type, equipment association, discipline, revision status, and custom metadata fields.
- **Version Control Management:** Historical revision access to maintain document lineage and regulatory compliance.

3.2 Maintenance & Operations Cluster

3.2.1 Maintenance Excellence

The Maintenance Excellence module provides comprehensive equipment lifecycle management and work order execution capabilities, enabling structured maintenance planning, execution, and documentation within the spatial context of the Model.

Key Capabilities:

- **Equipment Information Access:** Centralized repository for technical specifications, manufacturer data, installation records, warranty information, and operational parameters.

- **Work Order Management:** End-to-end work order lifecycle from creation through planning, assignment, execution, and closeout with status tracking and resource allocation with full 3D context and ability to automatically detect spatially conflicting work.
- **Preventive Maintenance:** End-to-end fully digitized preventive maintenance workflows with highly customizable checklists enabling automated capture, plotting of sensors and inspection data as well as automated alert generation.
- **Observation Reporting:** Field-based anomaly detection and issue reporting with automated 3D context, photo documentation, severity classification, and automatic work order generation capabilities.

3.2.2 Field Operations

The Field Operations module provides mobile-first capabilities for frontline workers to execute daily operational tasks, conduct equipment rounds, perform inspections, and capture field observations in real-time. This bridges the gap between planned maintenance activities and day-to-day operational oversight.

Key Capabilities:

- **Operator Rounds Management:** Digital checklists and route optimization for systematic equipment inspections with configurable inspection frequencies and mandatory (guided) checkpoints.
- **Real-Time Data Collection:** Mobile data entry interfaces for recording readings, measurements, and observations with timestamp and location capture for audit trail purposes.
- **Deficiency Identification:** Field-based issue reporting with photo/video documentation, severity assessment, and automatic escalation to appropriate maintenance or management personnel.
- **Lockout/Tagout (“LOTO”) Management:** Digital LOTO program administration with equipment-specific isolation procedures, authorized worker tracking, multi-lock coordination, and verification workflows to prevent accidental energization.
- **Electronic Permitting System (“ePermitting”):** Comprehensive permit-to-work workflows for hot work, confined space entry, excavation, and other high-risk activities with approval routing, hazard assessment, and expiration management
- **KeyBox Management:** Physical and digital access control system for managing keys, access cards, and credentials with check-in/check-out tracking, authorization verification, and audit trail generation.

3.3 Engineering & Projects Cluster

The Engineering & Projects cluster provides comprehensive capabilities for technical engineering, capital project management and planning as well as and master data governance from CAPEX planning to decommissioning. This cluster supports capital project workflows from initial planning through design, construction, commissioning, and eventual decommissioning while maintaining data integrity and regulatory compliance.

3.3.1 Measurements & Areas

The Measurements & Areas module provides advanced spatial analysis and quantification tools that leverage the Digital Twin Core module for precision engineering calculations, facility planning, and project estimation. This module enables technical personnel to extract or share accurate dimensional data directly from the 3D environment without physical site access.

Key Capabilities:

- **Precision Measurement Tools:** Advanced measurement capabilities including linear distance, multi-point polyline distance, surface area calculation, and angular measurements directly within the 3D Model environment (cm precision).
- **Clearance Analysis:** Spatial clearance verification for equipment installation, maintenance access paths, and material handling routes with clash detection and minimum clearance calculations.
- **Measurement Annotation:** Persistent measurement annotations with labels, callouts, and markup that remain associated with specific locations in the Model for documentation and communication purposes.

3.4 Platform (Foundation) Cluster

The Platform (Foundation) cluster provides the underlying infrastructure and integration capabilities that enable Clarity's unified architecture. This includes the Integration Hub module for enterprise system integration (accessible for the Supplier), flexible workflow configuration and automation, granular user administration, and security management that support all operational modules.

3.5 Mobile Applications Cluster

The Mobile Applications cluster extends Clarity's capabilities to personnel in the field through native iOS applications, enabling real-time field operations, augmented reality visualization, and self-service reality capture capabilities.

3.5.1 Clarity Mobile (AR)

The Clarity Mobile application leverages augmented reality and advanced computer vision technologies to bridge the digital-physical divide in industrial operations, providing field personnel with contextualized information and guided work procedures.

Key Capabilities:

- **Native iOS and Android Application:** Full-featured mobile interface optimized for field use.
- **Machine Vision Equipment Localization:** AI (machine vision-based) automated equipment localisation through camera recognition of asset without requiring QR code or RFID tag scanning.
- **Augmented Reality (AR) Overlay:** Real-time AR visualization that superimposes digital information, equipment data, safety warnings, and instructional content onto the live camera view of physical assets.
- **Prescriptive Maintenance Guidance:** Context-aware maintenance instructions delivered based on equipment type, task requirements, and real-time operating conditions.
- **Guided Work Procedures:** Step-by-step digital work instructions with multimedia support, safety reminders, quality checkpoints, and completion verification for standardized task execution.

3.5.2 Clarity Capture (iOS only)

Clarity Capture is a native iOS mobile application that empowers customers to independently capture small to moderate physical facility changes and updates for integration into the Digital Twin Core module. This self-service capability enables continuous Model maintenance without requiring specialized surveying equipment or external professional services.

Key Capabilities:

- **Mobile Reality Capture:** Native iOS application utilizing device camera and LiDAR sensors (where available) to capture photogrammetric data of facility modifications, new equipment installations, or infrastructure changes.
- **Guided Capture Workflows:** Step-by-step capture protocols ensuring adequate coverage, proper lighting conditions, and sufficient overlap for accurate 3D reconstruction.
- **Automated Upload and Processing:** Secure transmission of captured data to the Supplier's processing infrastructure to generate updated 3D geometry and textures.
- **Digital Twin Integration:** The Supplier processes customer-submitted captures and integrates the resulting 3D models into the existing Digital Twin Core, maintaining spatial accuracy and alignment with the broader facility model.
- **Change Documentation:** Automatic association of capture sessions with work orders, modification records, or change management workflows for comprehensive as-built documentation.

4. FEATURE EVOLUTION AND UPDATES

While the core functional modules described in Section 3 represent the foundational capabilities of the Platform, the Supplier continuously enhances the Platform through feature additions, performance improvements, and expanded integrations. All such enhancements are deployed to Customer's subscription without additional license fees, subject to the terms of the Agreement.

The Supplier reserves the right to modify, enhance, or discontinue specific features provided that such changes do not materially reduce the core functionality described herein. Material changes to core functionality will be communicated to Customer in accordance with the notice provisions of the Agreement.

The Supplier is entitled to change the module structure, cluster organization, and platform architecture at any time as part of product evolution and development roadmap execution. This Platform Specification is subject to updates based on feature releases, platform enhancements, and architectural changes, with such updates communicated to Customer through release notes and product documentation.

5. SUPPORT AND TRAINING

Access to the Platform includes technical support services as specified in the Support Specification and online documentation resources. Additional professional services including training, implementation support, custom integrations, and on-site training are available separately as described in a Professional Services Agreement.