

INFECTIOUS DISEASE MANAGEMENT

OBJECTIVE

Help teams to build intelligent digital twin solutions providing real-time 3D, XR and IOT support with a variety of deployment options.

VALUE

Low initial costs support exploratory and iterative development to find valuable use cases which can scale up to enterprise-grade deployments.



THE SOLUTION

The Axomem Axoverse is a vertically integrated digital twin platform. It enables real-time data integration and 3D visualization on low-cost infrastructure. It provides low-level IOT sensing through to XR visualization, modularized via APIs to enable composability with 3rd party components.

DIGITAL TWIN ROLE

Link time, spatial and sensor data with existing enterprise data to enable new insights. This helps organizations better understand and predict the physical world in which they operate.

BENEFITS & RESULTS [OR] BENEFITS & INTENDED RESULTS

Allow organizations to start small experimental use cases with low investment, iterate quickly, prove results. Use those results to scale up to realize value with enterprise-level integration and security.

USE CASE HIGHLIGHTS:

- 3D models built from 2D plans, imported 3D BIM or scanned via on-site mapping.
- Data integration with a wide variety of enterprise data interface types.
- Visualizations on low-spec PCs, tablets, and VR/AR devices (including HoloLens).
- Can be deployed entirely on-premise through to fully cloud hosted.
- Pre-built template available for Healthcare (Infectious Disease Tracking) with more planned.

Live Project –Solution Components

Infectious disease management at an acute care hospital

Visualization of Current Disease Spread

Epidemiologists get an up-to-date view of the state of disease spread across more than 1,700 inpatients in 6 blocks across the campus, linking existing enterprise data sources with interactive 3D visualizations.

Visual Time Slicing to Understand Progression and Trends

Users can move a time slicer across 12+ months of data to see patient movements between beds along with their current and future disease state, providing an unprecedented level of contact tracing and investigation.

Risk Quantification, Prediction and Notifications

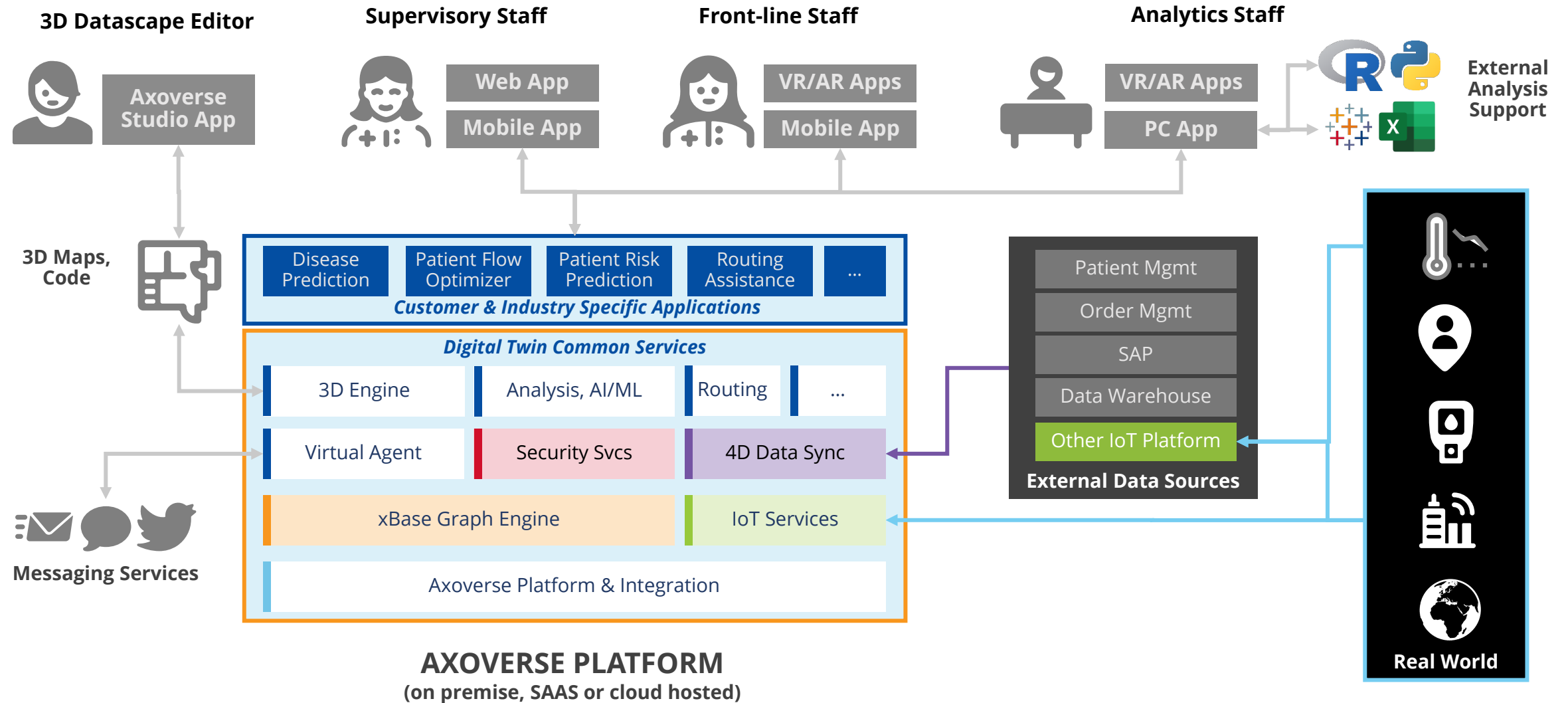
A risk quantification and prediction algorithm now uses both exposure time and spatial distance to better predict likely secondary infections to better prioritize screening targets. Further integrations and notifications are in development.

PROJECT HIGHLIGHTS:

- Large acute care hospital with 1,700+ inpatient beds across 6 blocks
- Commenced in January 2022 as a COVID response
- Built from 2D CAD maps, some of which were 20+ years old.
- Imports data from multiple data sources and fuses it into the 3D model.
- Now tracking over 15 pathogens, including viruses and multi-drug resistant organisms

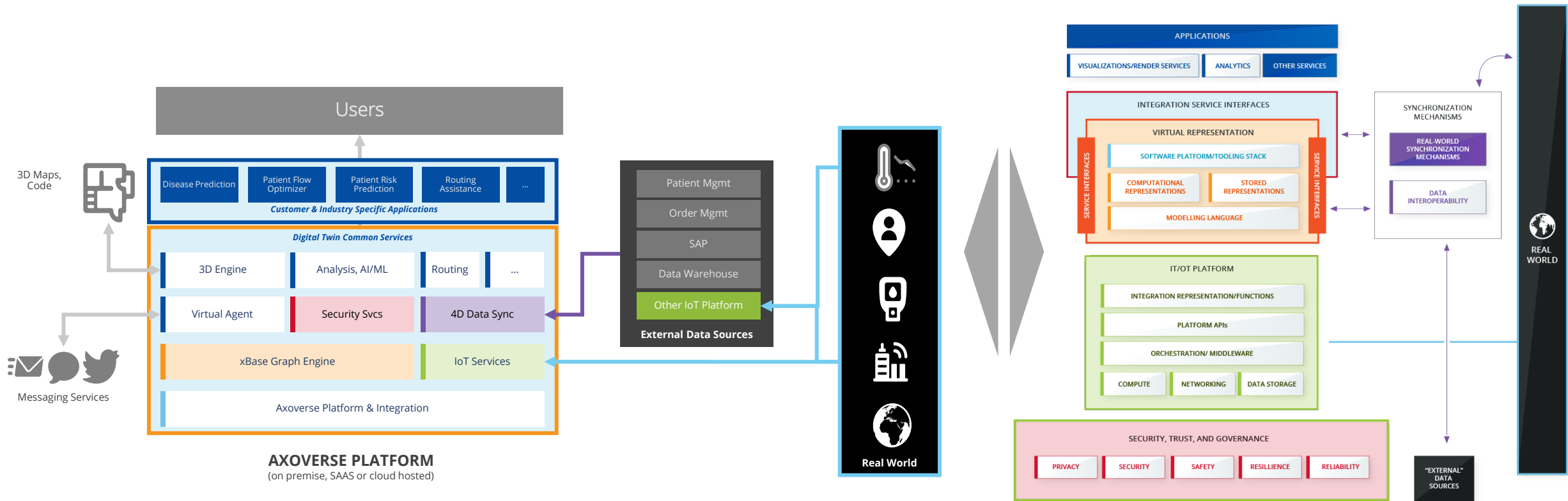
Use Case

Example high level digital twin system integration diagram



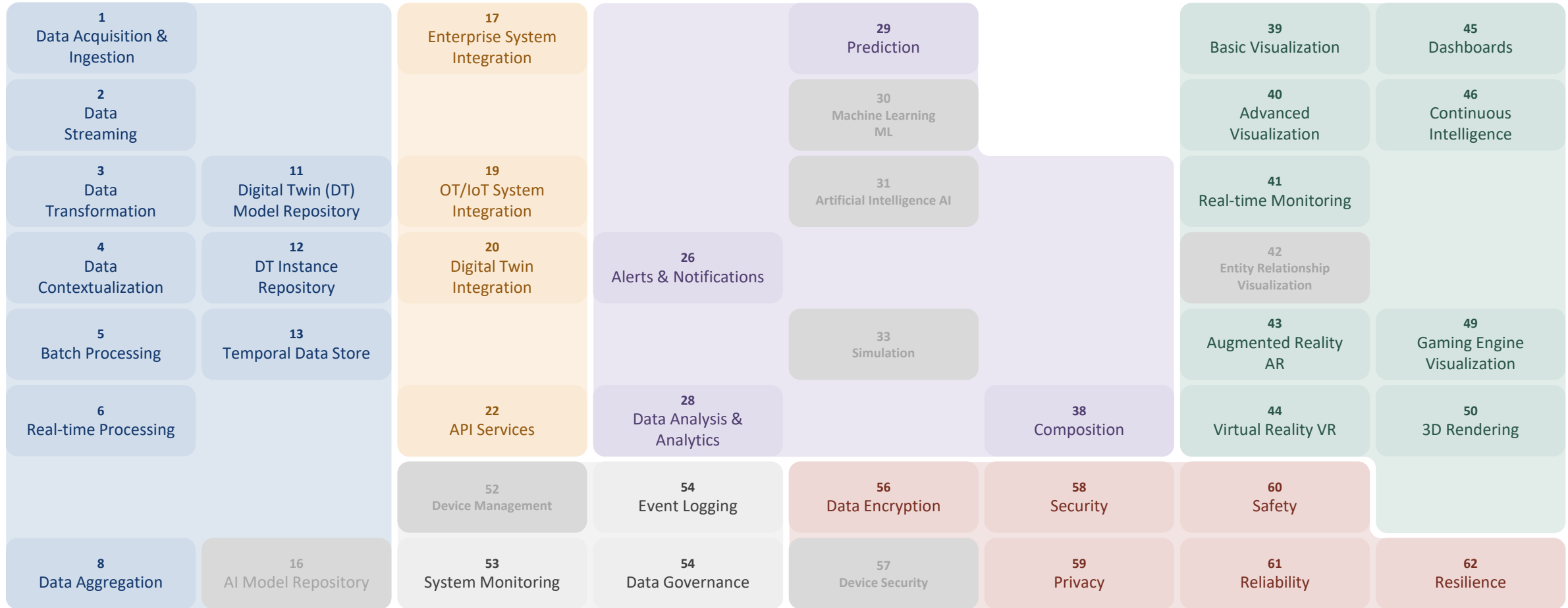
Digital Twin Reference Architectural Framework Mapping

The Axomem Axoverse Digital Twin Platform



Digital Twin Capability Periodic Table Mapping

The Axomem Axoverse Digital Twin Platform



○ Data Services
 ○ Integration
 ○ Intelligence
 ○ UX
 ○ Management
 ○ Trustworthiness
 Active development