

# THE ABU DHABI GEOSPATIAL DIGITAL TWIN



دائرة البلديات والنقل  
DEPARTMENT OF MUNICIPALITIES  
AND TRANSPORT



APRIL 2023



**1**

Municipal and Transport Spatial Database Hub

**2**

System Integration

**3**

External Data Integration

**4**

Digital Twin Platform

Smart Makani

7+  
AI/ML Tools

5000+  
Users

150+  
Smart Planning Tools

15+  
Smart Makani for External Entities

150 Dataset + 2000 Features / Layers

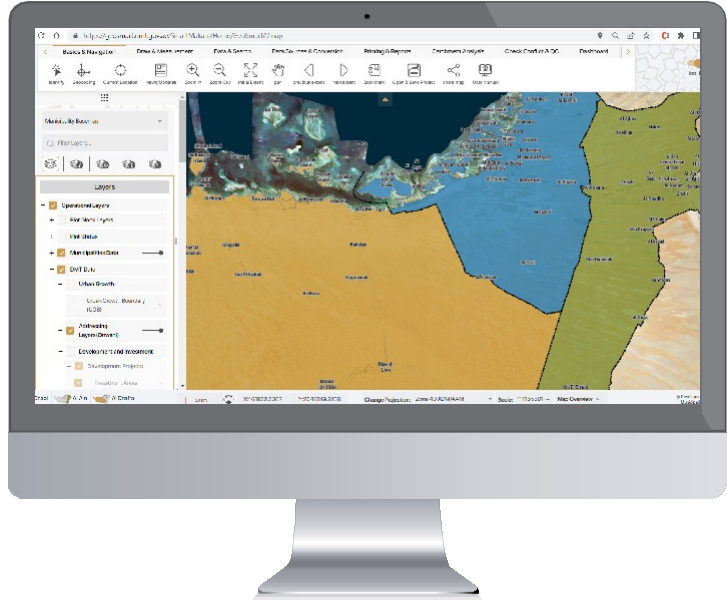
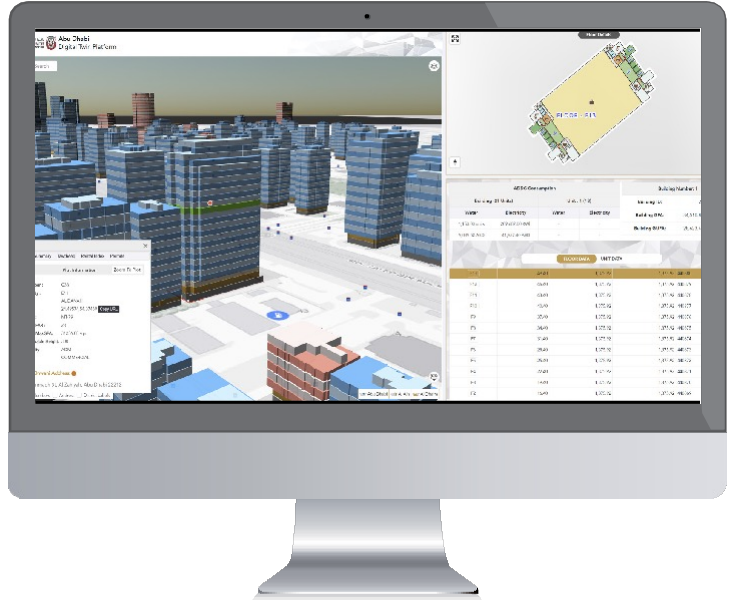
13 Standards & Policies

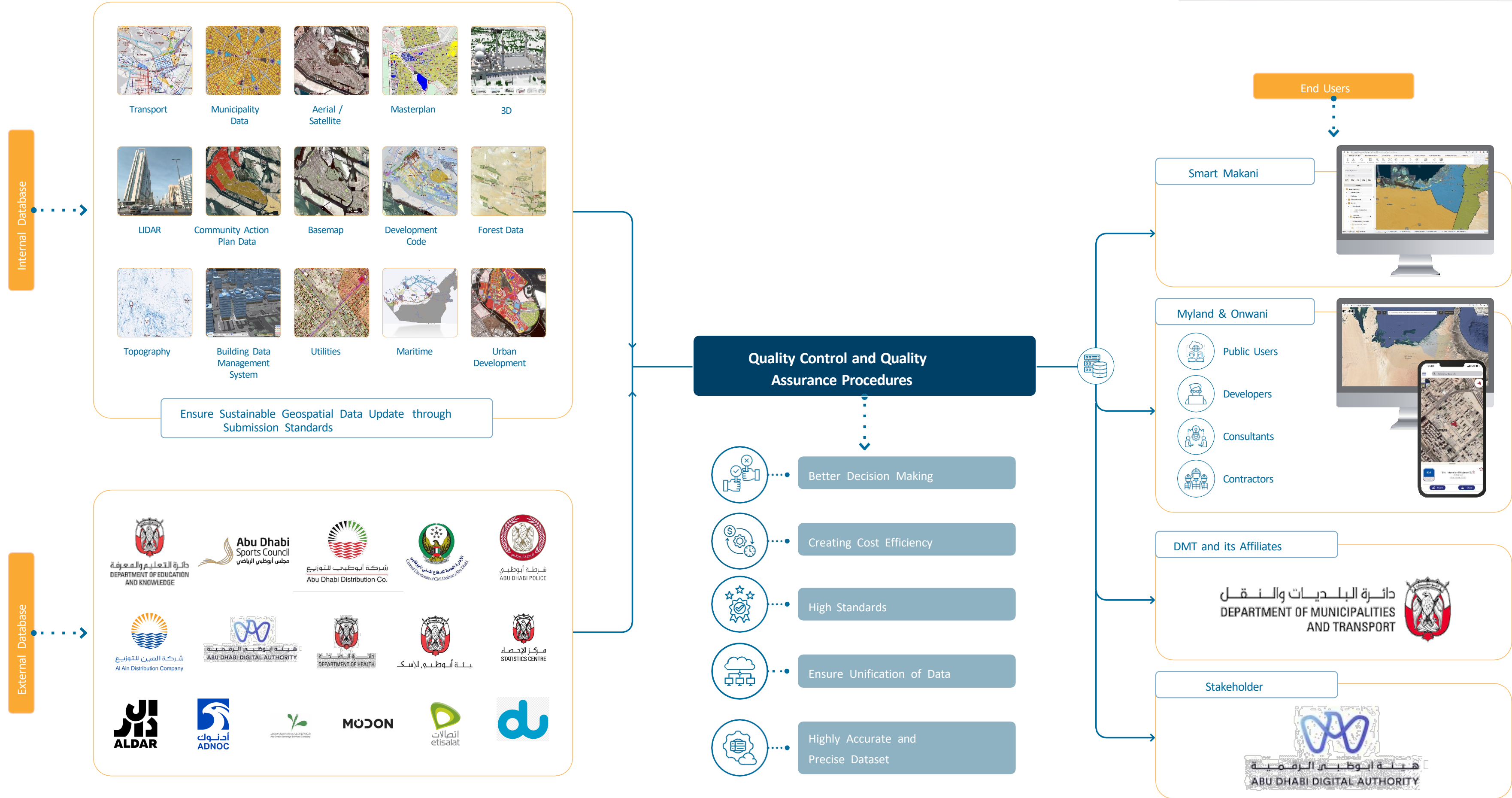
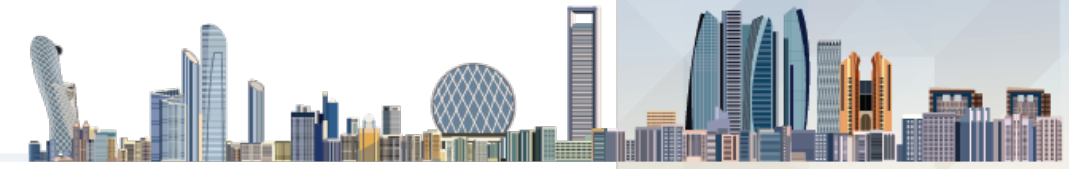
11+ Internal System Integration

- ENOC – No Objection Certificate
- MEPS – Building Permits
- MIMS – Municipal Inspection
- ELMS – Land Management System
- Tawtheeq
- TAMM / Smart Hub
- Unified Smart Survey
- SPS - Spatial Planning System
- Onwani Addressing System
- CIP – Capital Investment Project
- Osool - Asset Management System

15+ External Data Integration

- ADHA
- ADDA
- ADNOC
- Abu Dhabi Police
- SCAD
- ADEK
- DOH
- ADDC/AADC
- ADSC
- Civil Defense
- Modon
- Aldar
- ADSSC
- ETISALAT & DU
- Others...







# Holistic View

Different Systems to One View





- 10+ Data Integrations
- 1000+ Registered Users
- 4 Smart Makani Instances
- 75 Dataset
- 1000 Feature Class

- Road Detection
- Extract Crowded Plots
- Extract Cars
- Extract Green Area
- Extract Building
- Extract Parking Shed
- Extract Palm Trees

- 25+ Data Integrations (Internal & External)
- 5000+ Registered Users
- 15+ Smart Makani Instances
- 150 Dataset
- 2000 Feature Class
- 150+ Smart Advanced Tools



Abu Dhabi 3D Metaverse

2025

2009

Multiple system that serve the same needs

- Geoplanner
- Al Ain Oasis
- Makani
- GeoSmart
- Makani

Initiate the unified digital twin portal

2018

2019

Implementation of digital twin portal for municipal sector (one smart solution for all)

- Geo Spatial Forum Award (Netherland)
- Recognition of Myland app (Egypt)

2020

2021

Introducing 3D capabilities

2022

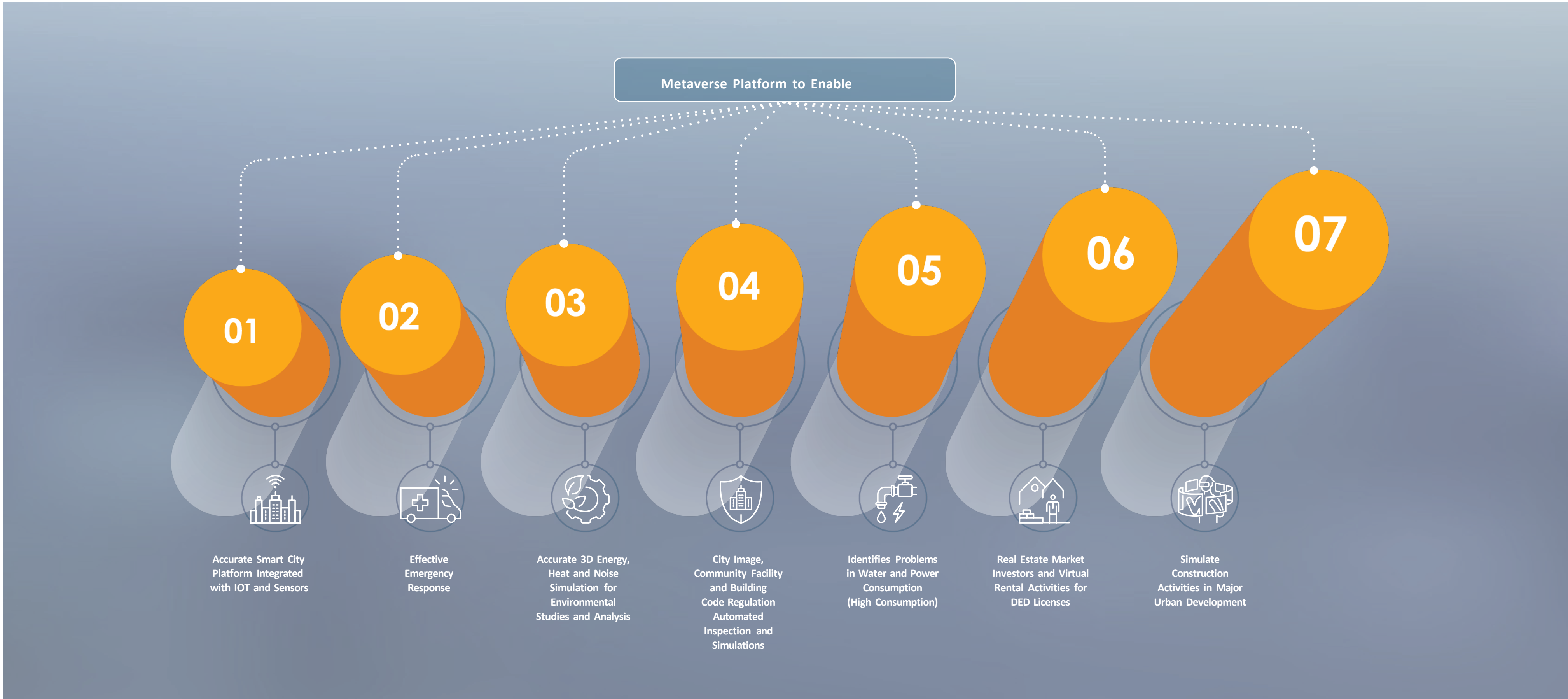
Advanced AI & deep learning tools

2023

- Special Achievement in GIS (SAG) Award (USA)
- Recognition at the 11th conference of Municipal works (Kuwait)







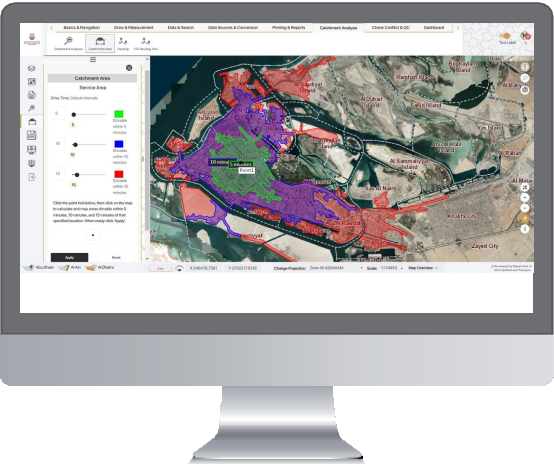
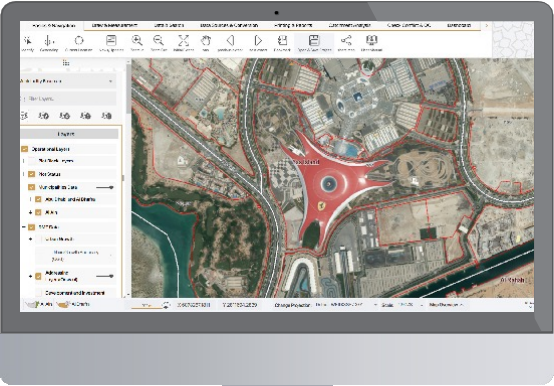


Current Initiatives

Status: Completed

The 2D Project

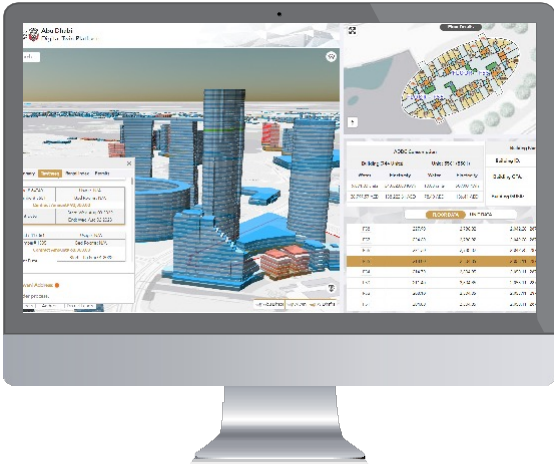
Smart Makani is a unified interactive map that collects, analyzes and manages spatial data. The system has many Smart Analysis tools, which support day to day business and key informed decisions at DMT and its affiliates.



Status: Ongoing

Building Data Management System

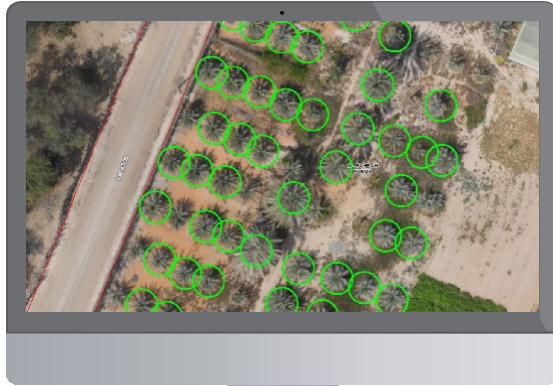
The BDMS (Building Data Management System) application builds building data from permit transactional procedures and drawing buildings from archives and links it with Tawtheeq data.



Status: Ongoing

AI & Deep Learning based Powerful Tools

The AI (Artificial Intelligence) in Geo- solutions project aims to reinforce the use of Artificial Intelligence methods approach and implement them in relevant GIS Systems and solutions to maximize the added values and supports in compliance with the municipalities.

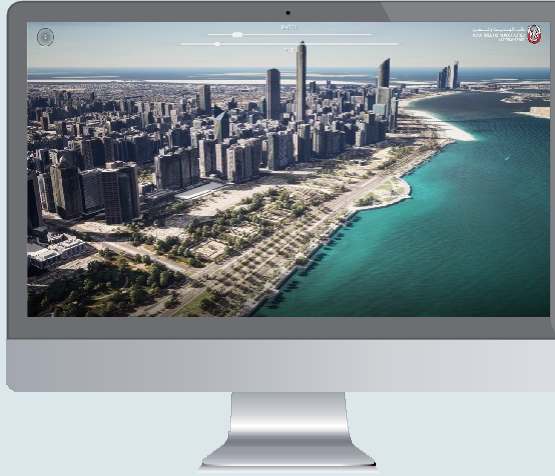


Future Initiatives

The Abu Dhabi 3D Metaverse Project

The 3D Mapping Project

Capturing accurately and Modeling the Building details and facade of the buildings, street furniture (HD) and manmade structure to build the Digital Twin of Abu Dhabi to enable Virtual Reality and Augmented Reality as well as 3D analytics and scenarios.



The Metaverse



Vision

Build enhanced online 3D interactive environments for web/mobile based on video games engine to make it user friendly allowing human interaction and activity like real life building the Abu Dhabi multiverse mimics and real events.



Objective

Support Real Estate market, Tourism, Cultural and Commercial Events, Future Urban Planning Scenarios, Construction activities...



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THANK YOU