esri | THE SCIENCE OF WHERE

Indoor GIS

Phillip Julian

June 2022

Introduction to Indoor GIS

What is Indoor GIS

Esri's Indoor GIS Offerings

Where things are moving

Demonstrations

- ArcGIS Pro Indoor Extension
- ArcGIS Indoor Viewer

Questions & Discussion

Survey

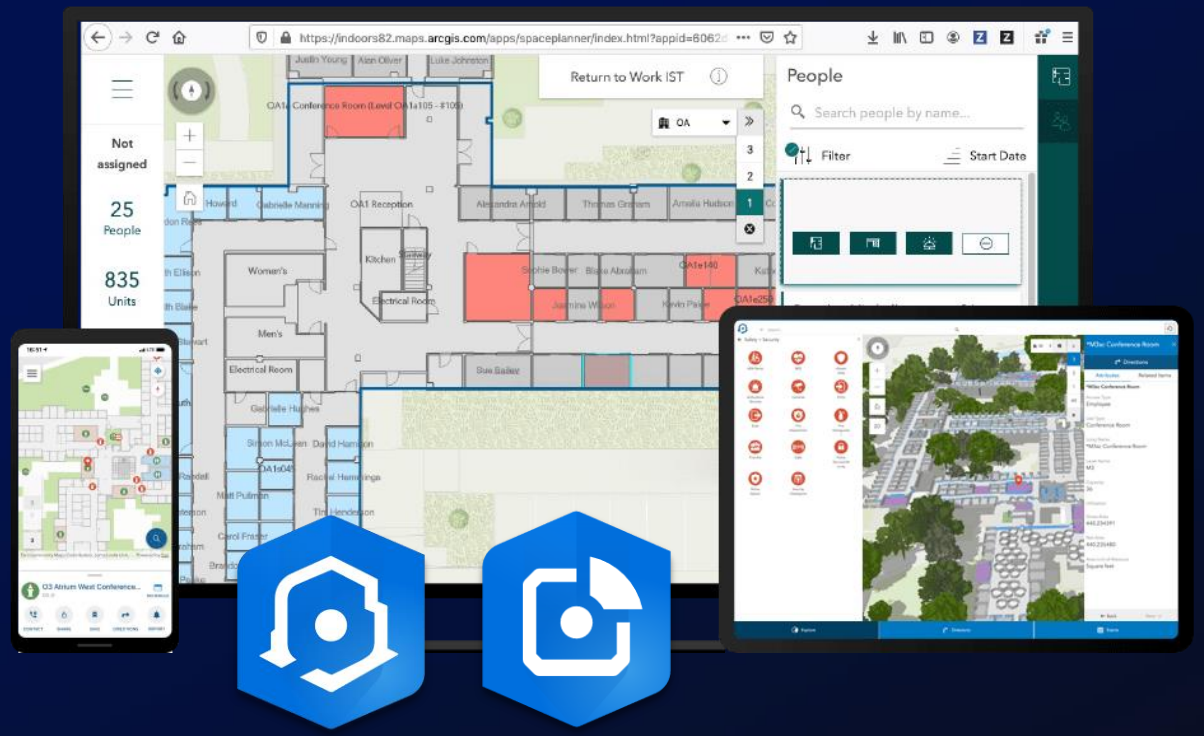
Indoor GIS

Smart Building Management

"Over the next 40 years, the total amout of indoor square footage will roughly double worldwide"

– United Nations

Indoor GIS Esri Indoor GIS Specific Offerings

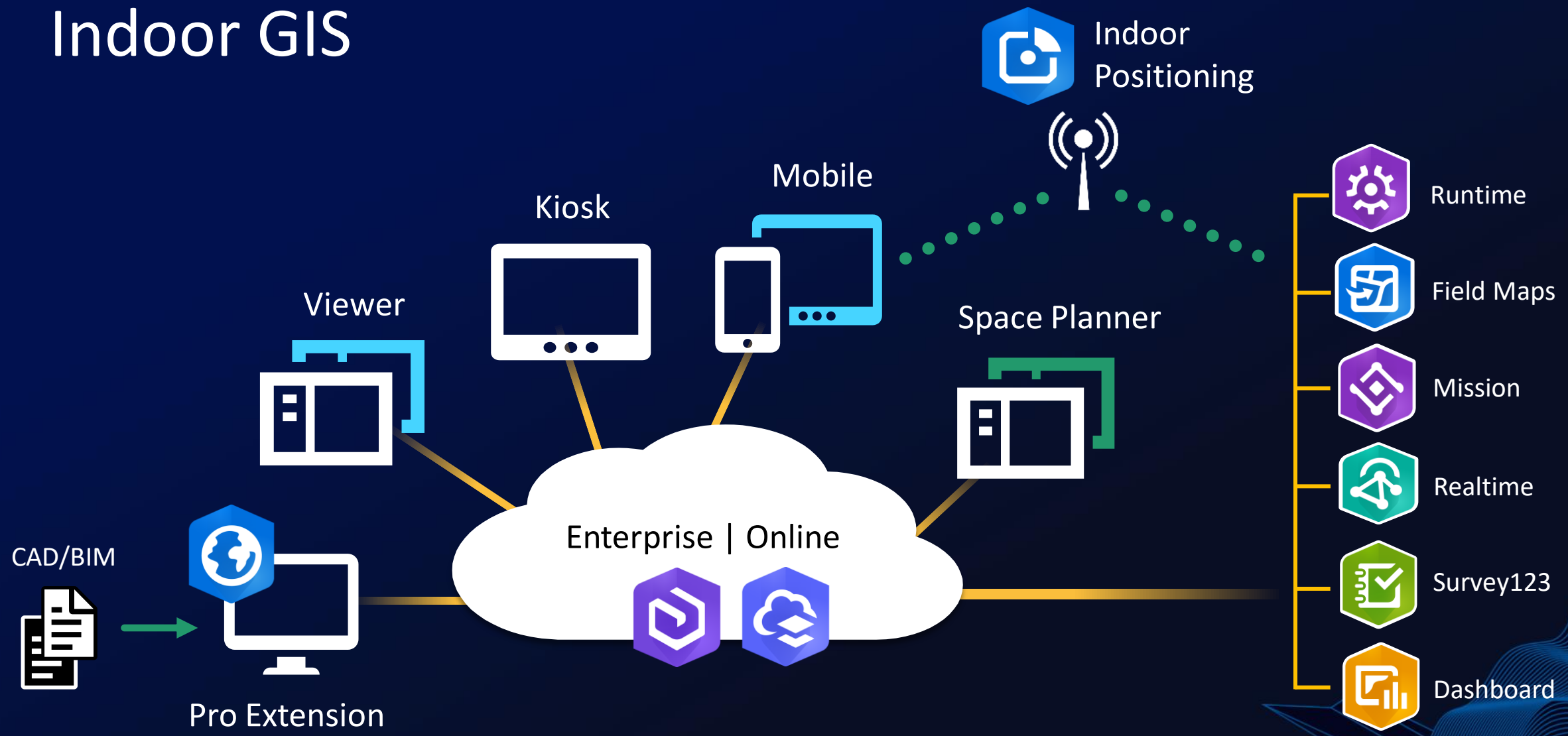


Indoor Mapping and Navigation

Indoor Positioning

Indoor Space Management

Indoor GIS


Indoor Positioning
Mobile
Kiosk
Viewer
Space Planner
Runtime
Field Maps
Mission
Realtime
Survey123
Dashboard
Enterprise | Online
CAD/BIM
Pro Extension

Indoors Pro

- Data Loading
- Data Management
- Publishing

Pro Extension

Indoors Maps

- Data Loading
- Data Management
- Publishing
- Viewing
- Navigation

Indoors Positioning

- IPS Setup
- Bluetooth / WiFi Positioning
- Wayfinding
- Tracking

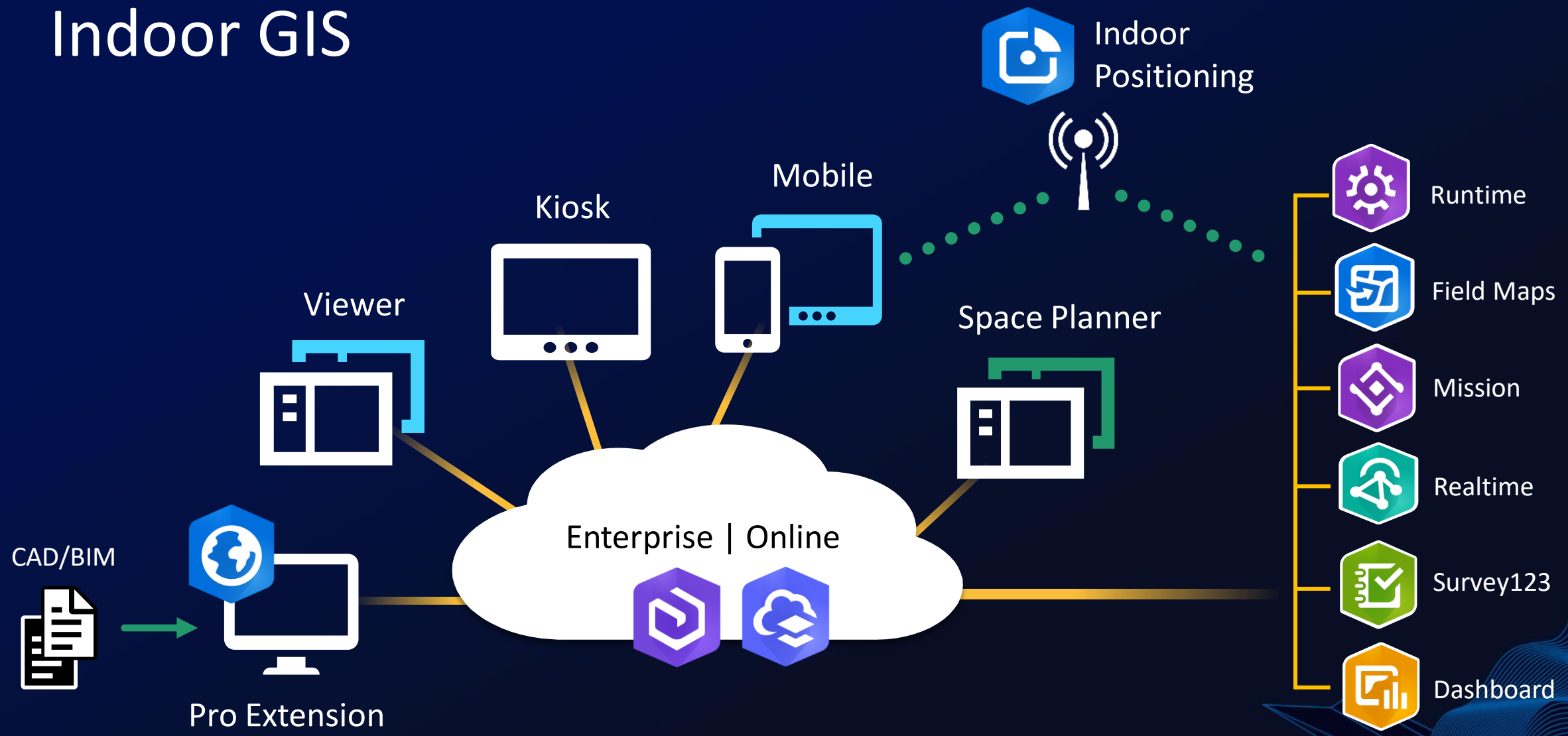
Indoors Spaces

- Space Planning
- Workspace Reservation*

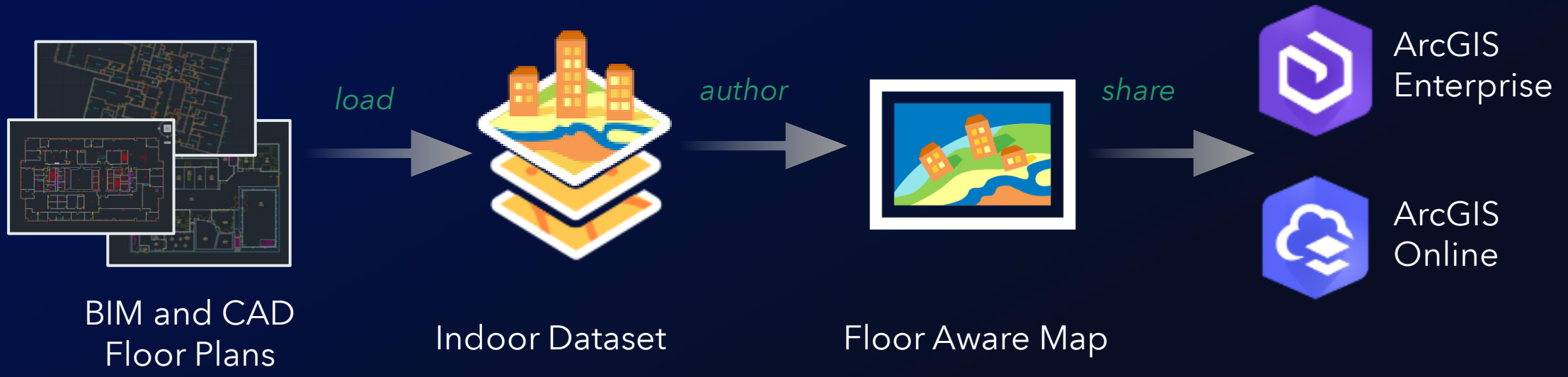
*enables workspace reservation in Viewer and Mobile

Space Planner

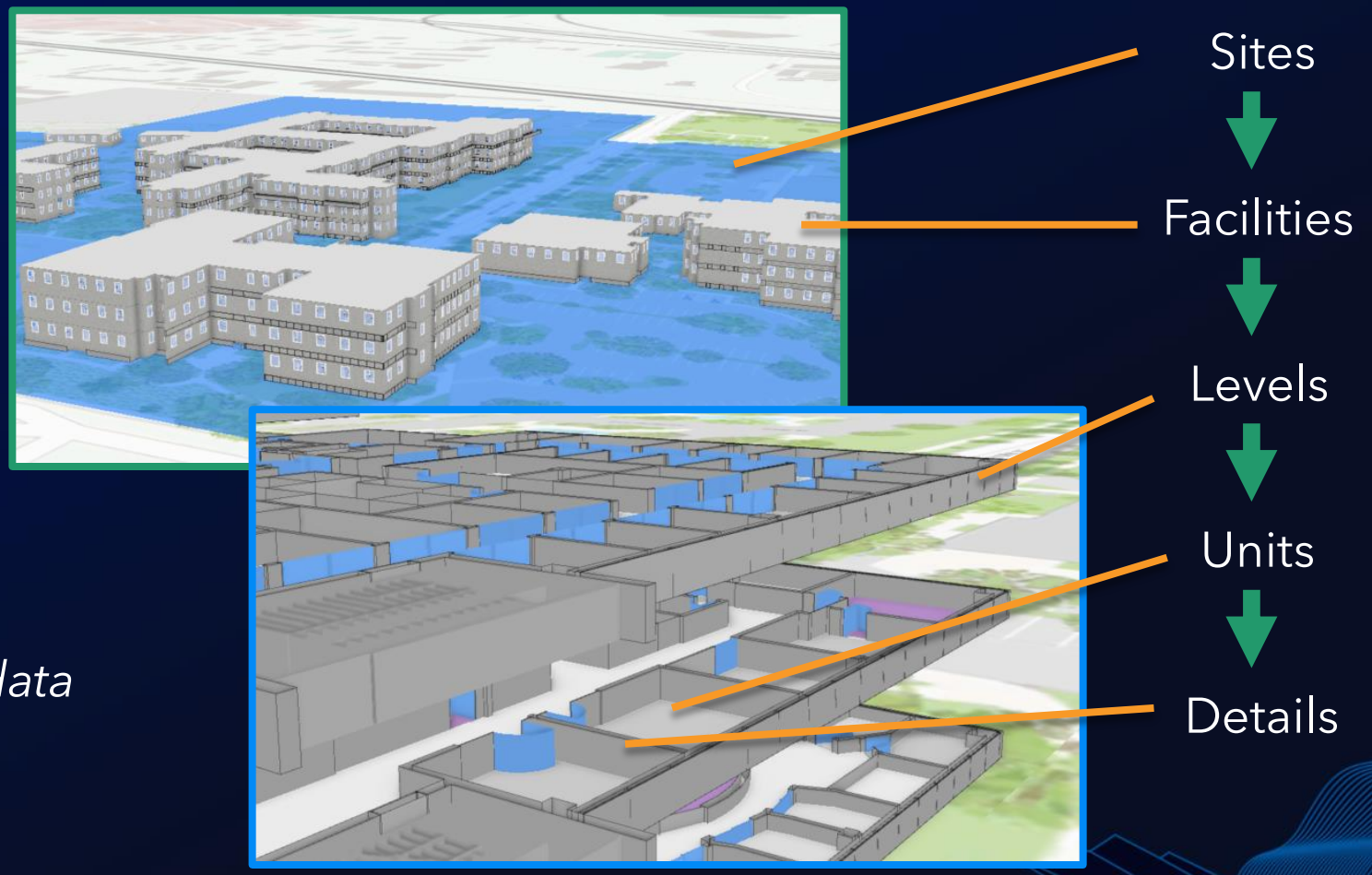
Indoor GIS


Indoor Positioning
Mobile
Kiosk
Viewer
Space Planner
Runtime
Field Maps
Mission
Realtime
Survey123
Dashboard
Enterprise | Online
CAD/BIM
Pro Extension

What is ArcGIS Indoors Pro?



What is the Indoor Dataset?



- Floorplan features
- Routable network

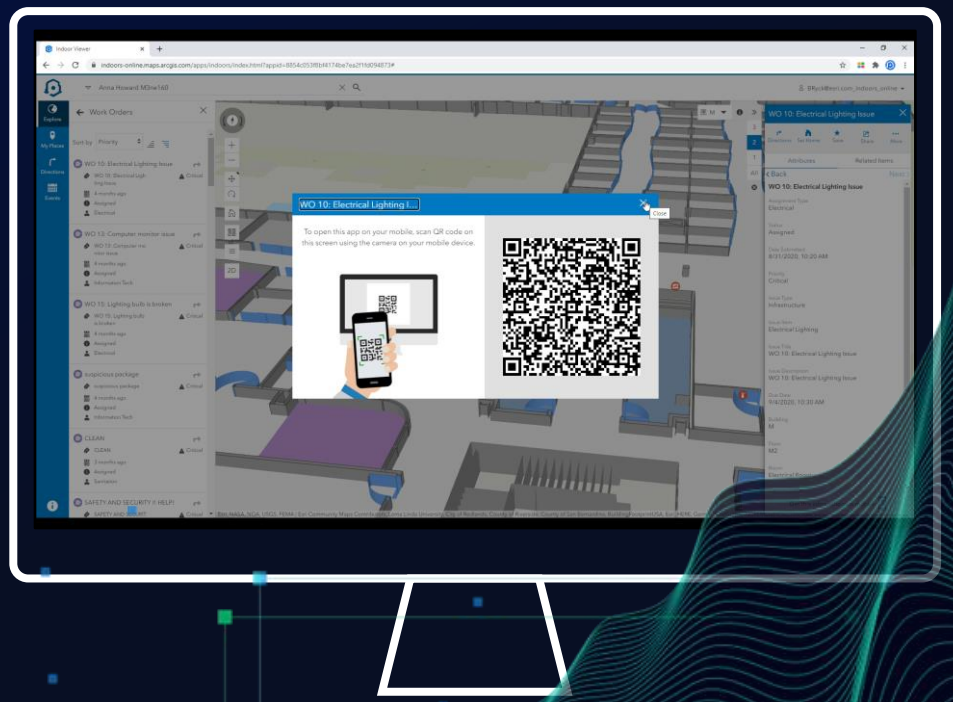
+ model your own floor aware data

Demo 1

ArcGIS Indoors for ArcGIS Pro

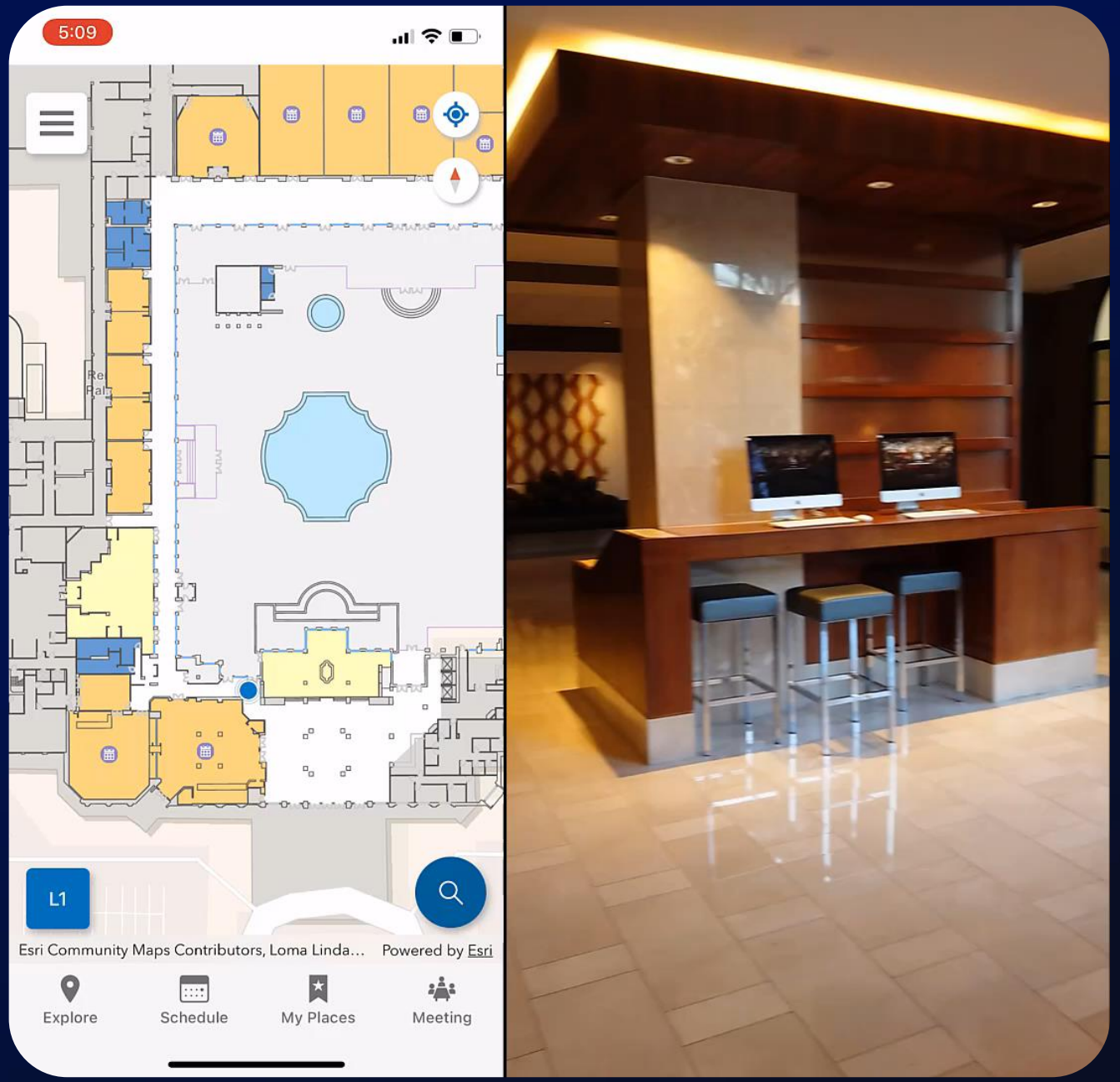
Demo 2

ArcGIS Indoors Viewer



ArcGIS IPS

Bring the Blue Dot Indoors



What is ArcGIS IPS?

Indoor Positioning System (IPS)

- Outdoors = GPS
- Indoors = IPS

Real-time positioning capability

- "Blue dot" inside buildings

IPS does not provide indoor mapping but makes use of it

- e.g., via ArcGIS Indoors Pro

ArcGIS IPS enables Esri products One setup enables multiple use-cases

Indoor Positioning
Setup

ArcGIS IPS
Setup

ArcGIS Pro
IPS GP tools

Information model
IPS enabled workspace

Indoor Positioning
Usage

ArcGIS Indoors

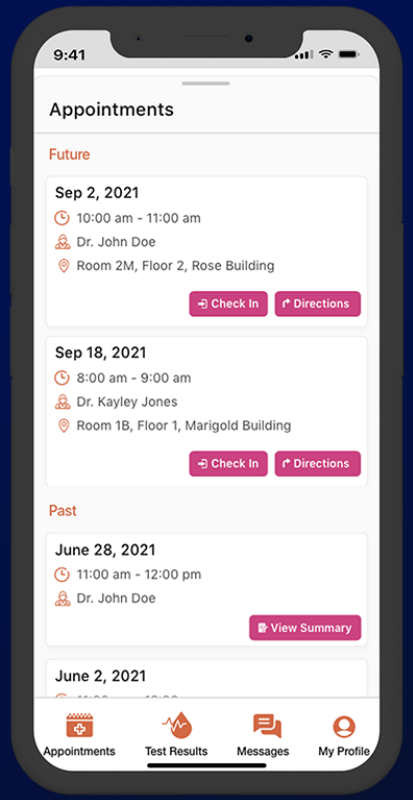
Coming in 2022+

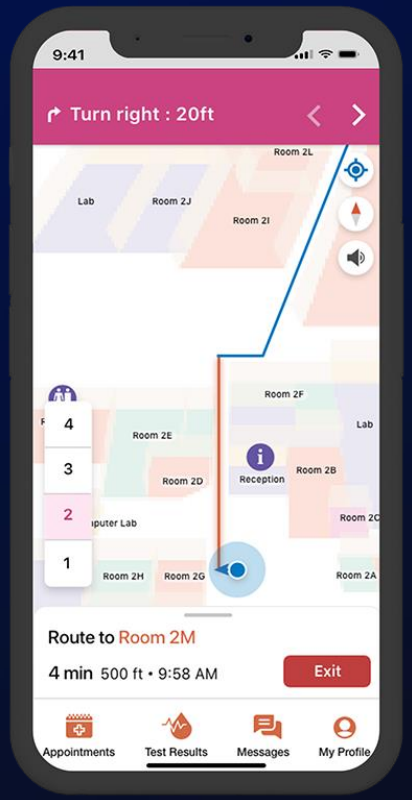
Esri's
Field Apps

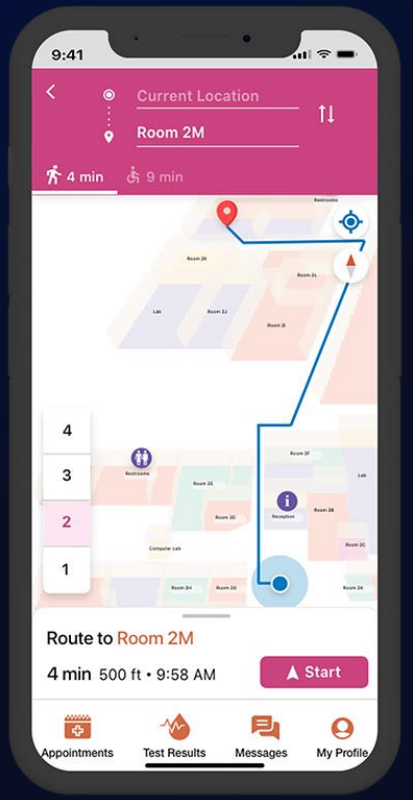
Custom built apps
ArcGIS Runtime SDKs

All powered by ArcGIS Runtime IPS

Example Use Cases Hospital Navigation

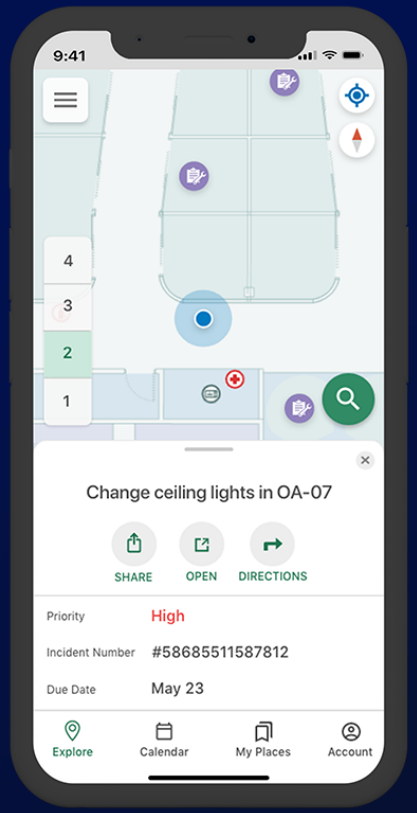


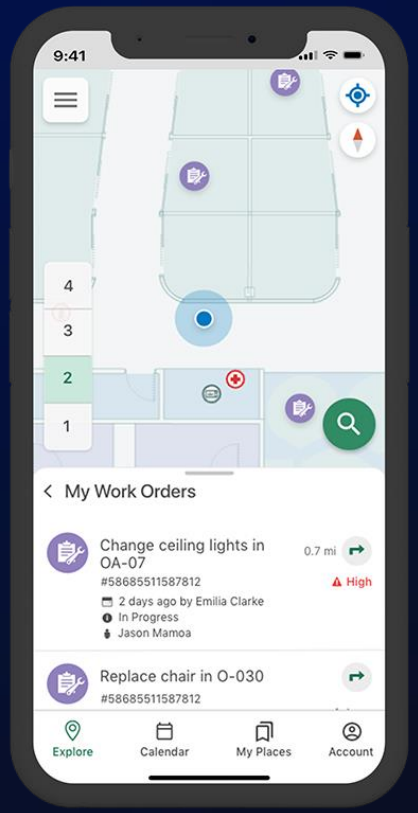


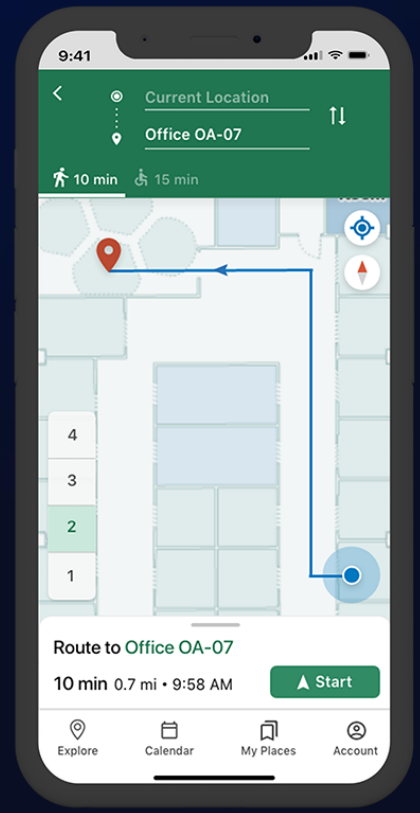


Images shown are intended to show what integrating indoor positioning into ArcGIS Indoors or an ArcGIS Runtime-based custom-built app can look like.

Example Use Cases Work Order Management

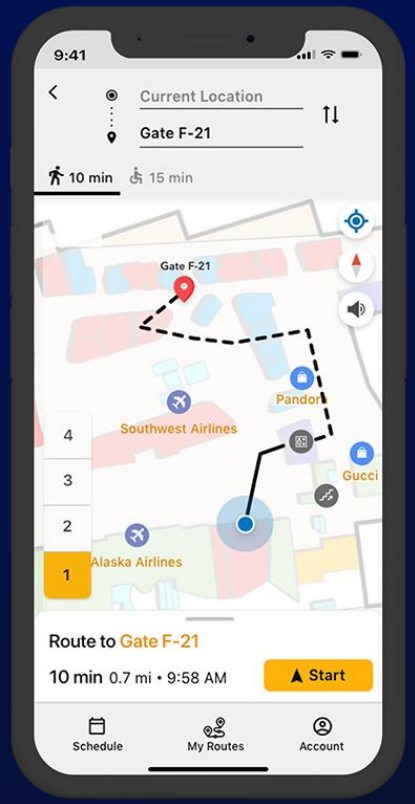


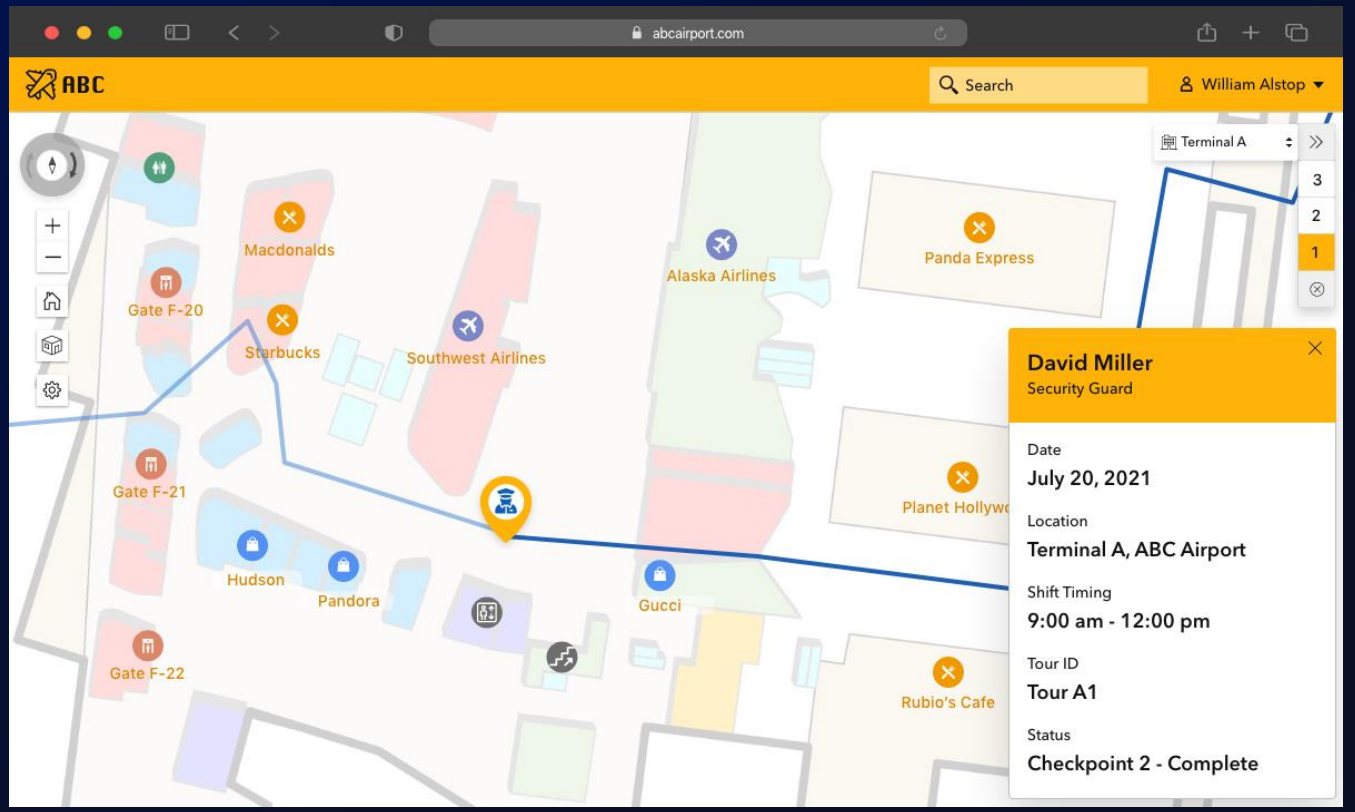




Images shown are intended to show what integrating indoor positioning into ArcGIS Indoors or an ArcGIS Runtime-based custom-built app can look like.

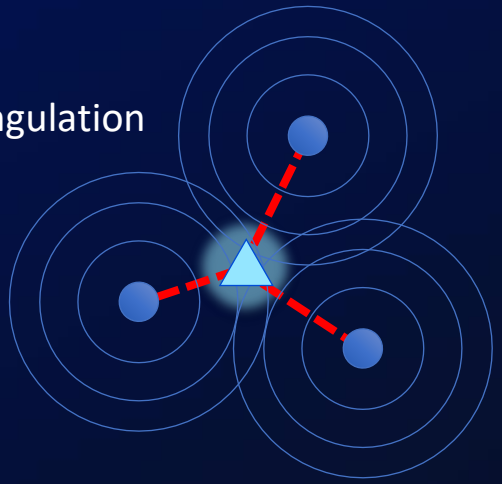
Example Use Cases Safety and Security

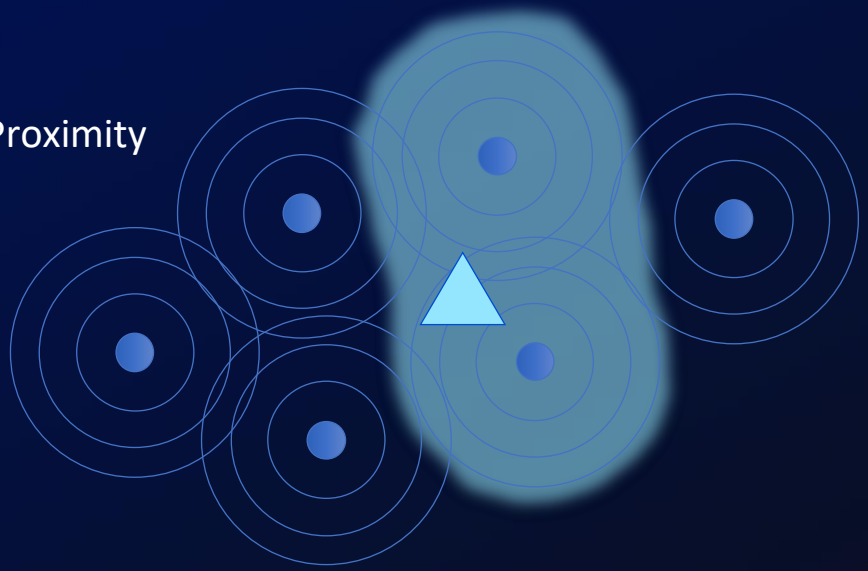


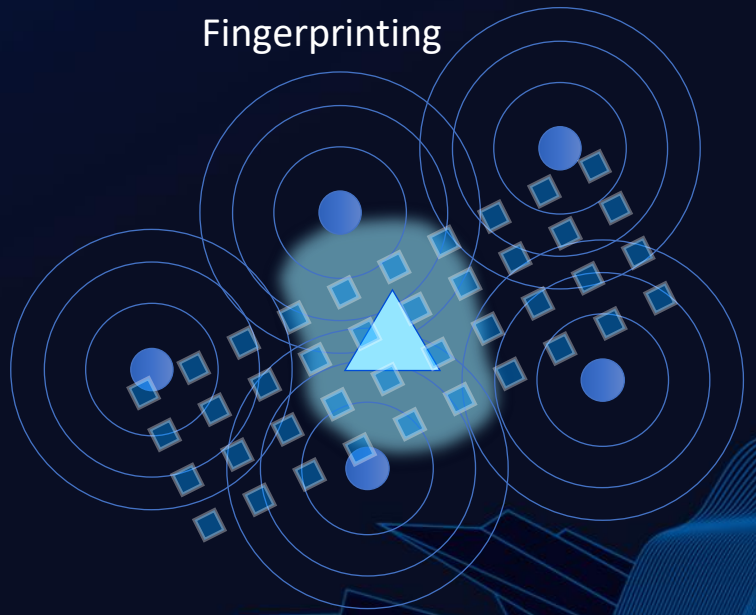


Images shown are intended to show what integrating indoor positioning into ArcGIS Indoors or an ArcGIS Runtime-based custom-built app can look like.

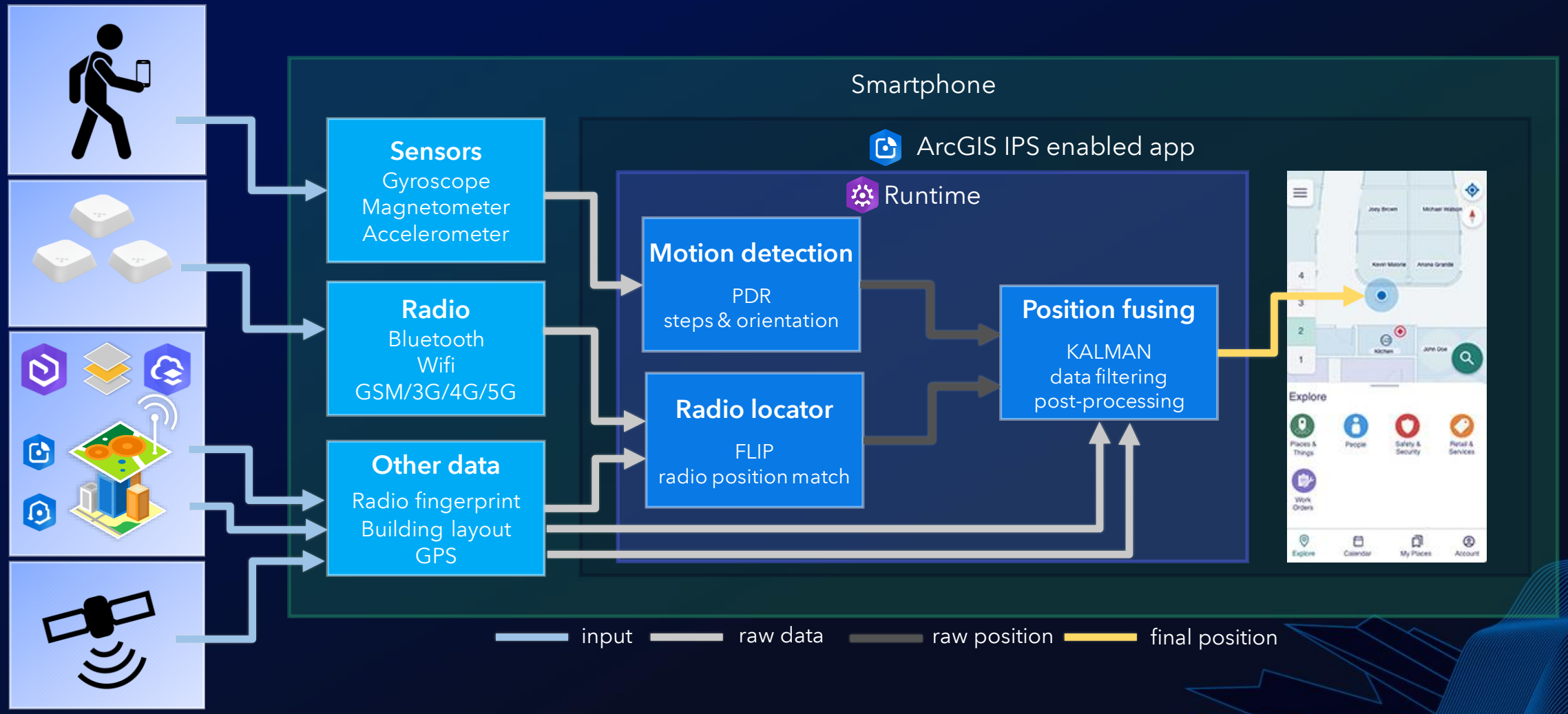
IPS Radio Technologies Overview







ArcGIS IPS Calculating the Blue Dot



ArcGIS IPS Requirements and Qualifications

Requirements and Qualification Questions

- Buidling/Campus of a decent size
- Indoor map in place (via ArcGIS Indoors prefered)
- Professional use-case; not nice-to-have

- Esri Software
  - Enterprise 10.9.1
  - Online
  - Pro 2.9.1
  - Runtime 100.14

- 3rd party IPS Hardware
  - iOS: iBeacons
  - Android: iBeacons
  - Q2 release: WiFi support on iOS and Android


Government Facilities


Higher Education


State / Local Gov't


Corporate Campuses


Transportation Hubs


Utilities


Hospitals

Questions?