



Essential Patterns of Use

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**GIS
INSPIRING
WHAT'S
NEXT**

ArcGIS Common Patterns of Use

Mapping & Visualization



Understand locations and relationships with maps and visual representations

Data Management



Collect, organize, and maintain accurate locations and details about assets and resources

Field Mobility



Manage and enable a mobile workforce to collect and access information in the field

Monitoring



Track, manage, and monitor assets and resources in real-time

Analytics



Discover, quantify, and predict trends and patterns to improve outcomes

Design & Planning



Evaluate alternative solutions and create optimal designs

Decision Support



Gain situational awareness, and enable information-driven decision making

Constituent Engagement



Communicate and collaborate with citizens and external communities of interest

Sharing & Collaboration



Empower everyone to easily discover, use, make, and share geographic information

What makes these patterns essential?

- **Esri has revealed common types of activities for customers across all industries**
- **Patterns enable relevant business-focused requirements conversations for both business and technical stakeholders**

Pattern: Mapping & Visualization

- **Definition:** Mapping & Visualization is how people understand locations and relationships through visual representations. 2D and 3D maps and charts bring data to life and provide context, so people can easily communicate and understand information.
- **Solution Design Consideration**
 - How are users expected to access and interact with maps?
 - What applications, skills, and infrastructure do people need to design and consume great maps?

Mapping & Visualization



Understand locations and relationships with maps and visual representations

Pattern: Data Management

- **Definition:** Data Management is how people collect, organize, and maintain accurate locations and details about assets and resources. Optimal data management involves the persistence of spatial data within a set of storage models, each optimized for unique characteristics. Storage models include the geodatabase, spatiotemporal big data store, relational data store, and tile cache.

- **Solution Design Consideration**

- Who will be responsible for managing enterprise and domain-focused content?
- What skills, applications and infrastructure are needed to manage enterprise geospatial content?



Pattern: Field Mobility

- **Definition:** Field Mobility includes managing and enabling a mobile workforce to collect and access information in the field. Improve visibility into the operational aspects of an organization, enhance workforce scheduling, reduce issues caused from stale data, and empower personnel with information needed to perform tasks while on the move.

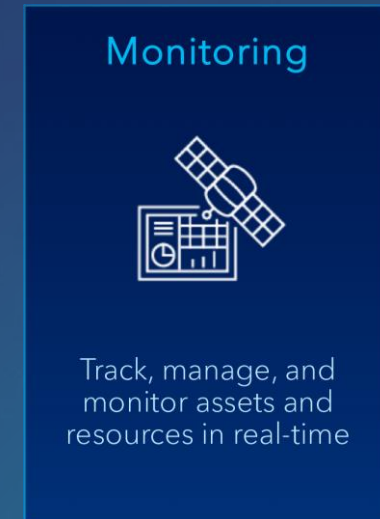
- **Solution Design Consideration**

- Who needs to collect or edit field observations?
- Who needs to manage work assignments?
- Are place finding and wayfinding important?
- What skills, applications and infrastructure are needed?



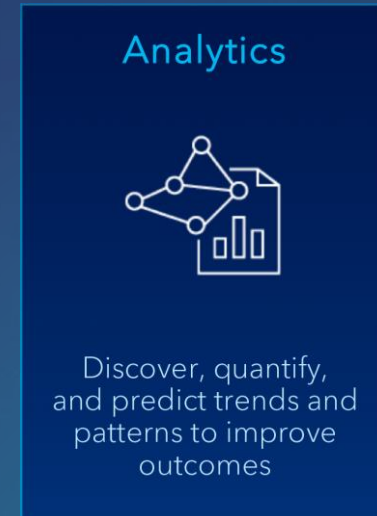
Pattern: Monitoring

- **Definition:** Monitoring allows people to track, manage, and monitor fixed and mobile assets and resources in real time. Organizations can simultaneously tap into, analyze, and display streaming data from many sensors, devices, and social media feeds.
- **Solution Design Consideration**
 - What spatiotemporal activity needs to be managed (fixed or mobile assets)?
 - Does this involve telemetry, imagery or both?
 - What applications, skills, and infrastructure do people need to work with monitoring content?



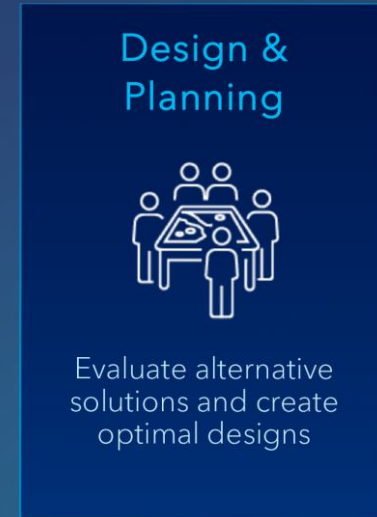
Pattern: Analytics

- **Definition:** Analytics involves applying analytical techniques to transform data into actionable information. Discover, quantify, and predict trends and patterns to empower decision making and improve business outcomes.
- **Solution Design Consideration**
 - What manner of organizational activity needs to be analyzed?
 - How are people intended to access and apply analytics?
 - What applications, skills, and infrastructure do people need to build and effectively apply analytical capabilities?



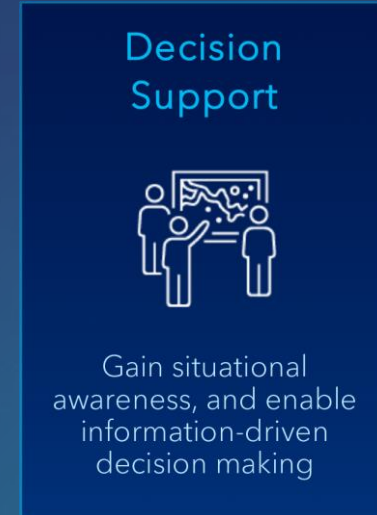
Pattern: Planning & Design

- **Definition:** Design & Planning enables people to evaluate alternative solutions and create optimal designs. This supports the design workflow by enabling users across organizations and communities to collaborate on design decisions.
- **Solution Design Consideration**
 - How do planners and designers need to work with executives and domain stakeholders, both formally and informally?
 - What applications, skills, and infrastructure do people need to enable a planning and design practice?



Pattern: Decision Support

- **Definition:** Decision Support involves visualizing data on a map or dashboard to better understand activities, projects, and operations. Combine data, metrics, and operational and analytical layers in a way that produces information valued by decision makers.
- **Solution Design Consideration**
 - Who needs access to timely mapping and analytics to guide decisions?
 - What actions will users want to take at decision points?
 - What applications, skills, and infrastructure do people need to enable sustainable decision support capabilities?



Pattern: Constituent Engagement

- **Definition:** Constituent Engagement includes two-way sharing of information with the public, partner agencies, or other external stakeholders. Improve engagement and collaboration with communities of interest for more informed decision making.
- **Solution Design Consideration**
 - How do organizational practices need to be extended to partners, contractors, the public?
 - What mapping, analytics, presentation, and collaboration capabilities are needed?
 - What applications, skills, and infrastructure do people need to deliver and sustain this capability?



Pattern: Sharing & Collaboration

- **Definition:** Sharing & Collaboration provides self-service capabilities, so people can discover, use, make, and share maps. Extend the value of location information to the entire organization or community.
- **Solution Design Consideration**
 - One of the most valuable patterns
 - Who in your organization needs to find, create, and apply maps to...
 - Visualize structured and unstructured content
 - Build and deliver presentations
 - Mark up a map together with colleagues
 - What applications, skills, and infrastructure do people need to deliver and sustain these capabilities?



Applying the Patterns | Executive Dashboard

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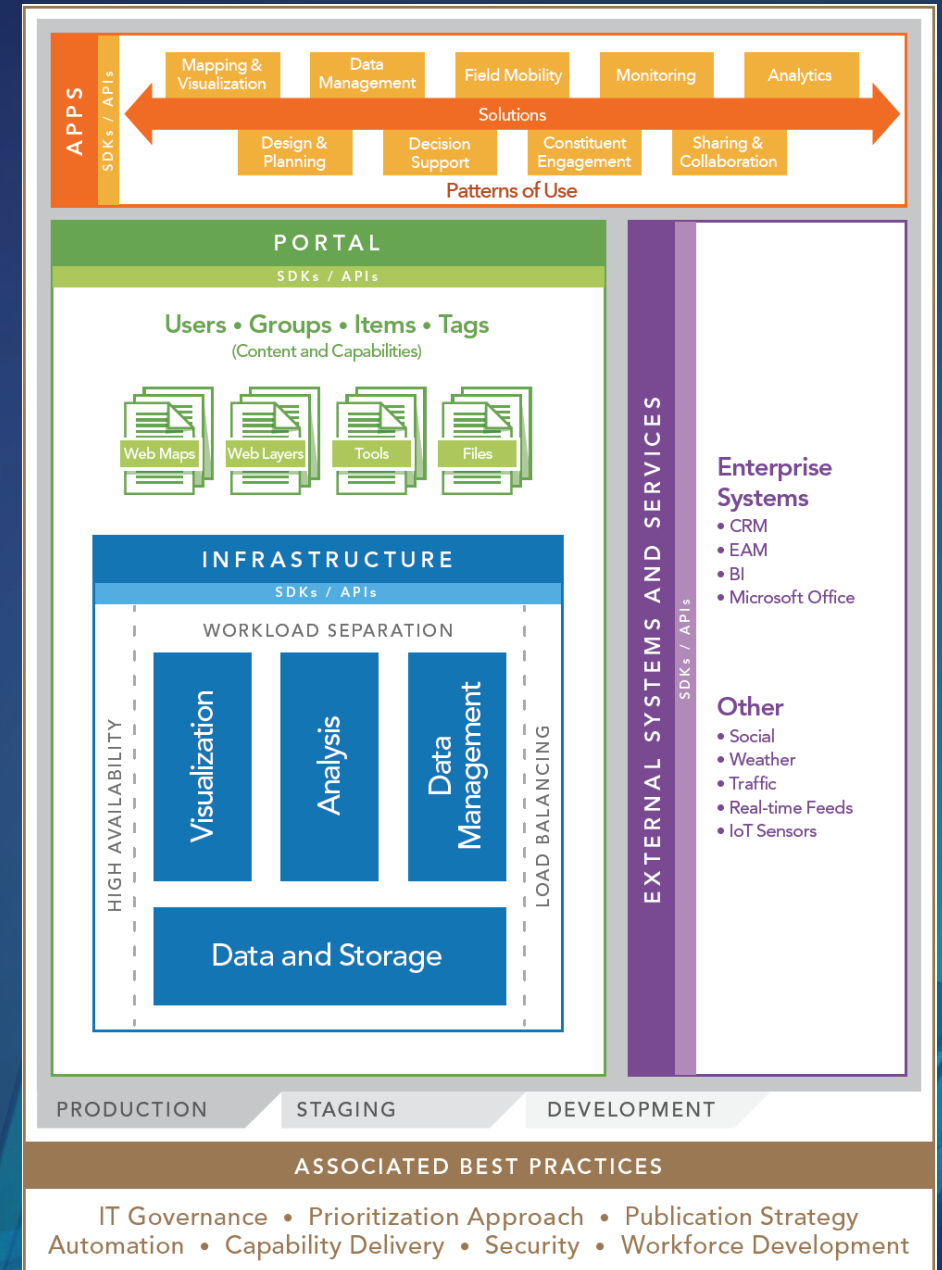
Empower everyone to easily discover, use, make, and share geographic information

Applying the Essential Patterns to a Portfolio of Solutions

| Solutions | Mapping & Visualization | Data Management | Field Mobility | Monitoring | Analytics | Design and Planning | Decision Support | Constituent Engagement | Sharing & Collaboration |
|---------------------------------|------------------------------------|------------------------|-----------------------|-------------------|------------------|----------------------------|-------------------------|-------------------------------|------------------------------------|
| Executive Operational Awareness | X | X | X | X | X | | X | | X |
| Business Intelligence | X | X | | X | X | | X | | X |
| Facility Planning | X | X | | | X | X | X | | X |
| Work Management | X | X | X | X | X | | X | | X |
| Safety and Security | X | X | X | X | X | | X | X | X |

ArcGIS Platform Conceptual Reference Architecture

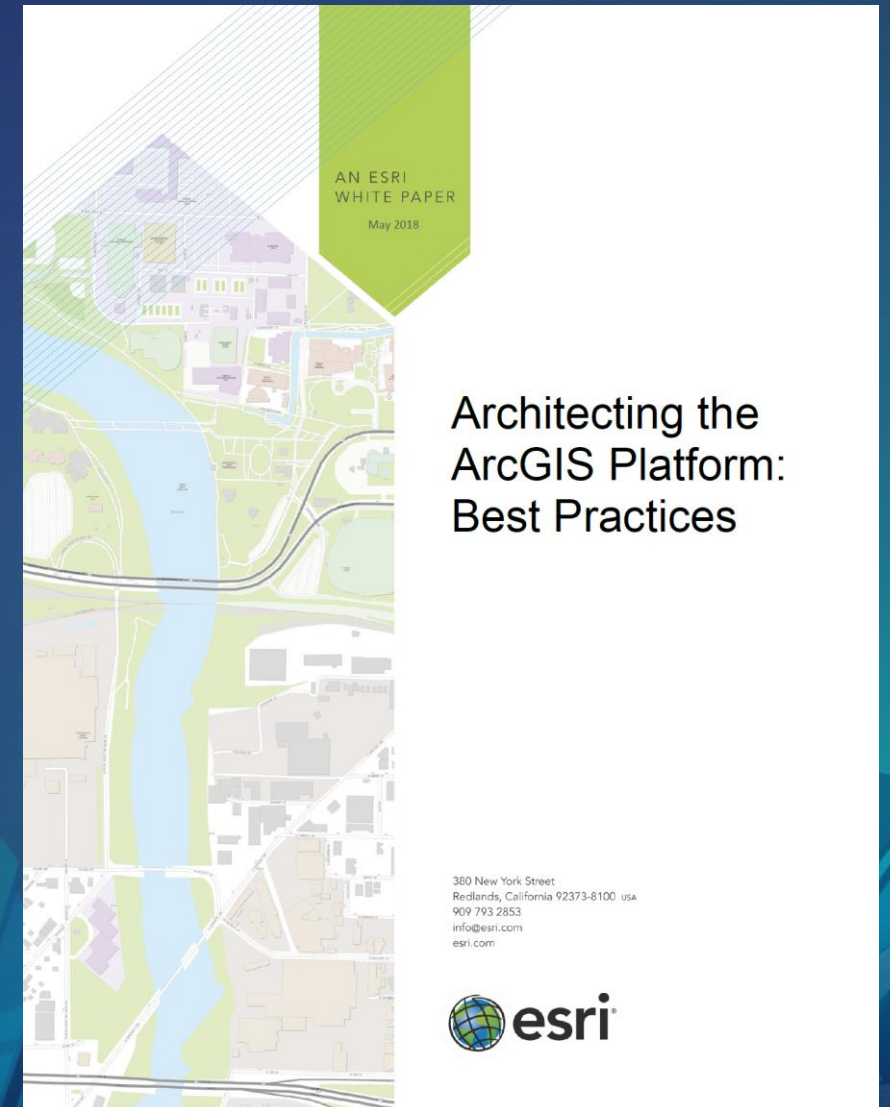
- ArcGIS is a Platform Solution
- Supports a range of workflows
- Portfolios of applications
- Integrated identity management
- A variety of workloads and content
- Integration with external systems
- Built to enable the collaborative work of an enterprise
- The Essential Patterns of Use categorize capabilities for applications, maps, and content that lead to well-design solutions.





ArcGIS Platform Best Practices Guidance

- Application Implementation Strategy
- Apply IT Governance
- Automation
- Capability Delivery
- Distributed GIS
- Enterprise Integration: Application Patterns
- Environment Isolation
- High Availability
- Infrastructure
- Load Balancing
- Managing Identities
- Patterns of Use
- Prioritization Approach
- Publication Strategy: Geospatial Content Delivery
- Real-time GIS Strategy
- Security
- Workforce Development
- Workload Separation

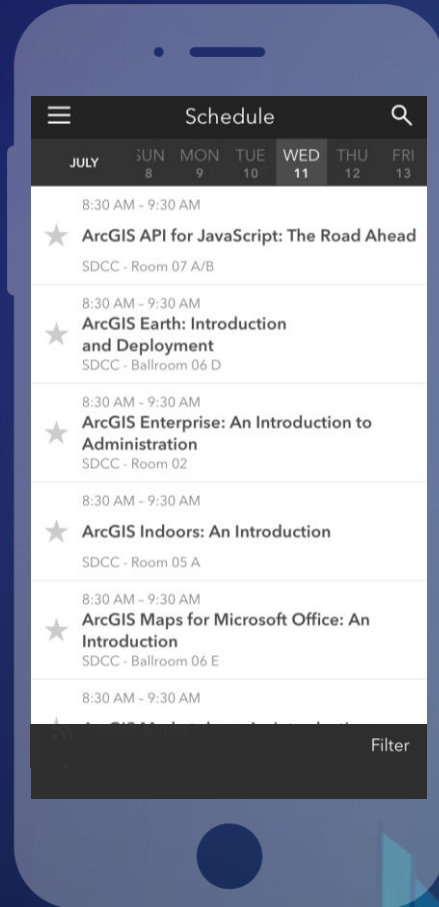


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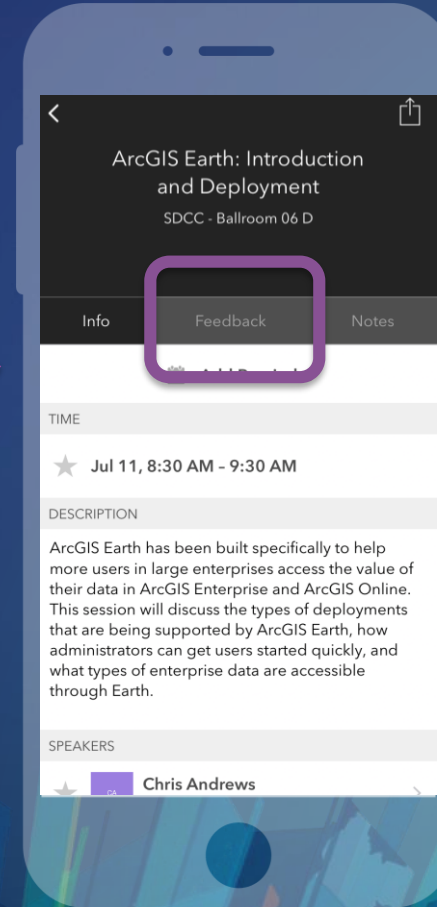
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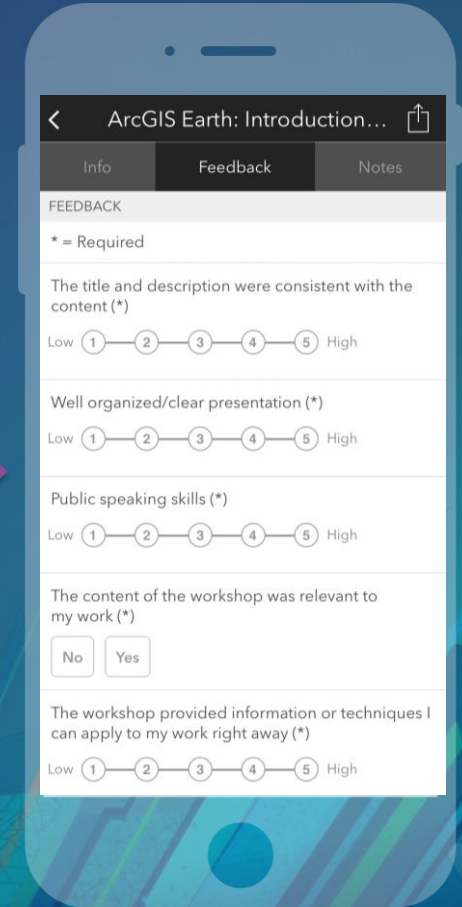
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