

FDOT's Enterprise Geographic Information System (GIS)



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FDOT GIS Coordinator**

Agenda

- ◆ Background
 - Evaluate
 - Pilot
 - Implementation
- ◆ Enterprise GIS Framework
- ◆ Enterprise GIS View (GEV)
 - Demonstrations
- ◆ What's Next



Background

- ◆ Research
 - Business Case for Enterprise GIS (2008)
 - Phase 1 - **Evaluate** business case to determine whether to proceed with implementation of Enterprise GIS
 - Phase 2 – Formulate **Pilots** and develop implementation plan detailing steps for successful implementation of Enterprise GIS
 - Phase 3 – **Implement** Enterprise GIS along with documented procedures and policies



Background

- ◆ Research
 - Business Case for Enterprise GIS (2008)
 - Phase 1 - **Evaluate** business case to determine whether to proceed with implementation of Enterprise GIS
 - What is Enterprise GIS? “ Enterprise Geographic Information Systems (GIS) is an organization-wide framework for Department communication and collaboration of shared geospatial data and GIS resources that enhances existing business processes and provides an efficient way to plan, analyze, and manage transportation infrastructure and related elements. ”

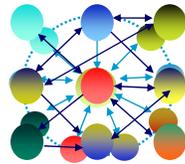


Background

◆ Research

- Business Case for Enterprise GIS (2008)
 - Phase 1 - **Evaluate** business case to determine whether to proceed with implementation of Enterprise GIS

– Enterprise GIS: Distributed data storage with enterprise standards



Background

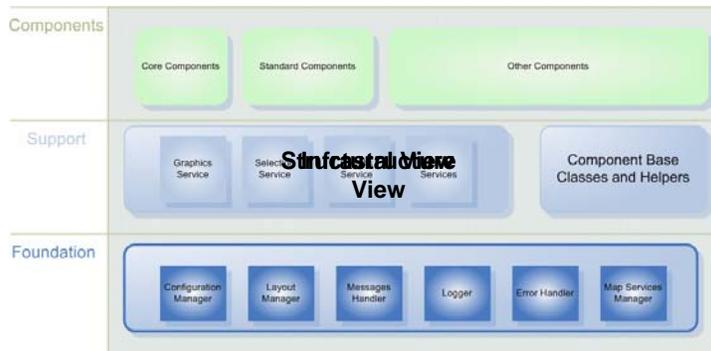
◆ Research

- Phase 2 – Formulate **Pilots** and develop implementation plan detailing steps for successful implementation of Enterprise GIS
 - In the fall of 2009, the Business Systems Support Office (BSSO) and the FDOT GIS Coordinator began researching, in depth, different approaches to GIS development efforts that had been implemented around the state. It was determined that the District Seven approach to the design of an enterprise GIS was best suited as a **successful proof of concept for Enterprise development**. The approach was presented to, and approved by, the Executive Board in March 2010.

Background

◆ Research

- Phase 2 – Formulate **Pilots** and develop implementation plan detailing steps for successful implementation of Enterprise GIS



Background

◆ Research

- Phase 3 – **Implement** Enterprise GIS along with documented procedures and policies
 - GIS Strategic Plan –
 - *Resources Used 2008*
 - Business Case
 - Gartner Research (technology research and advisory company)
 - Examples and Discussions with Other DOTs
 - ASSHTO GIS for Transportation Symposium (GIS-T)



Background

- ◆ Research
 - Phase 3 – **Implement** Enterprise GIS along with documented procedures and policies
 - GIS Strategic Plan
 - Vision
 - GIS will be a standard tool commonly used throughout the Department to support transportation decision making.
 - Mission
 - Establish an organization-wide framework for the governance of GIS technology that will facilitate effective management, communication and collaboration of shared geospatial data and resources.



Background

- ◆ Research
 - Phase 3 – **Implement** Enterprise GIS along with documented procedures and policies
 - GIS Strategic Plan
 - Goals
 - Increase the use of GIS to improve business processes, increase productivity, enhance decision support, and reduce costs.
 - Extend the use of maps and other GIS tools/data to improve communication and the quality of services provided within the Department and to DOT partners, governmental entities, and citizens.



Background

◆ Research

- Phase 3 – **Implement** Enterprise GIS along with documented procedures and policies
 - GIS Strategic Plan
 - **Goals** (continued)
 - Identify and implement the appropriate technical architecture to best support the local and enterprise GIS needs of the Department.
 - Establish and maintain standards and guidelines that leverage department and external geospatial resources to drive efficiencies.
 - Establish a cohesive governance model that supports organization-wide management and utilization of geospatial information.



Background

◆ Research

- Phase 3 – **Implement** Enterprise GIS along with documented procedures and policies
 - GIS Policy - Topic No. 000-010-002-a
 - *New GIS Definition:*
 - A Geographic Information System (GIS) is a computer based system for capturing, storing, integrating, manipulating, analyzing and displaying data related to positions of items on the Earth's surface (Department of State, **Electronic Recordkeeping Rule, Rule No: 1B-26.003 Florida Administrative Code**). GIS technology supports graphical analysis of geo-referenced data and enhances the quality of the Department's information assets.



Background

◆ Research

- Phase 3 – **Implement** Enterprise GIS along with documented procedures and policies
 - GIS Policy - *highlights*
 - Investments in GIS technology be leveraged in a cost effective manner
 - GIS Strategic Plan in 2009 to serve as a road map
 - Ensures that GIS is implemented with an enterprise strategy
 - Management support is always needed
 - Managed under the direction of the Management Steering Committee
 - Recommendations arise from Functional GIS experts in each District
 - FDOT GIS Coordinator oversees enterprise initiatives and chairs a Functional Steering Committee of GIS Experts.



Background

◆ Research

- Phase 3 – **Implement** Enterprise GIS along with documented procedures and policies
 - FDOT Geospatial Data and Metadata Standards (September 2010)
 - These elements were derived from the Content Standard for Digital Geospatial Metadata (CSDGM) set by the Federal Geographic Data Committee (FGDC).
 - The audience for these GIS standards includes all FDOT staff, and their contractors, who create or manage GIS data.



Background

- ◆ Research
 - Phase 3 – **Implement** Enterprise GIS along with documented procedures and policies
 - FDOT Geospatial Data and Metadata Standards (September 2010)
 - Items include
 - Projections and Datums
 - GIS Data File Formats
 - Imagery Data File Formats
 - Geospatial Metadata Standards



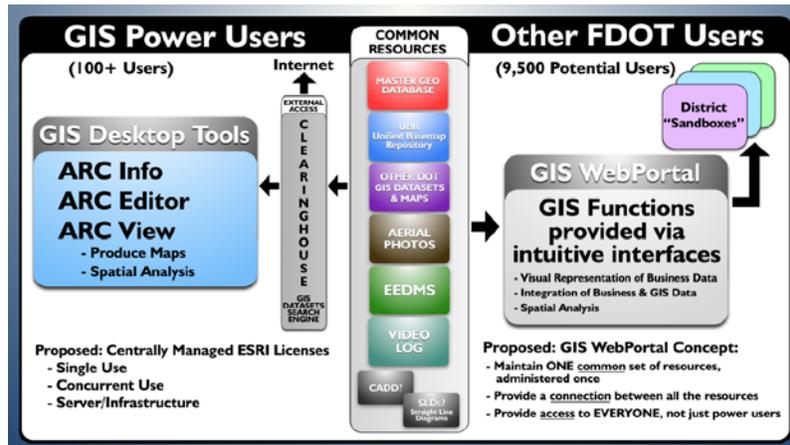
Enterprise GIS Framework

- ◆ Objective:
 - The GIS Framework exists to provide a service-based system, framed within today's enabling technology that will provide a foundation for future growth within FDOT. This type of framework will provide FDOT with the benefits of re-usability, flexibility, and scalability. One website and is driven by a configuration model that allows for flexibility in exposing functionality and creating unique user interfaces.



Enterprise GIS Framework

◆ Vision



Enterprise GIS Framework

◆ Key Terms

- Framework
 - A collection of software components structured into three layers that provide foundation, support, and application services. The framework is one website and is driven by a configuration model that allows for flexibility in exposing functionality and creating unique user interfaces
- Architecture
 - The structure(s) of the system, which comprise software components, the externally visible properties of those components and the relationships between them.
- Core data layers
 - Collection of enterprise data layers maintained by Database Administration (DBA). These data layers are utilized by FDOT personnel throughout the organization.



Enterprise GIS Framework

◆ Key Terms (cont.)

- Web Services

- Web Services represent an extension of the concept of off-the-shelf software to that of software delivered as a service. They are building blocks that enable developers to build and aggregate applications and services from local and remote resources for a range of clients.

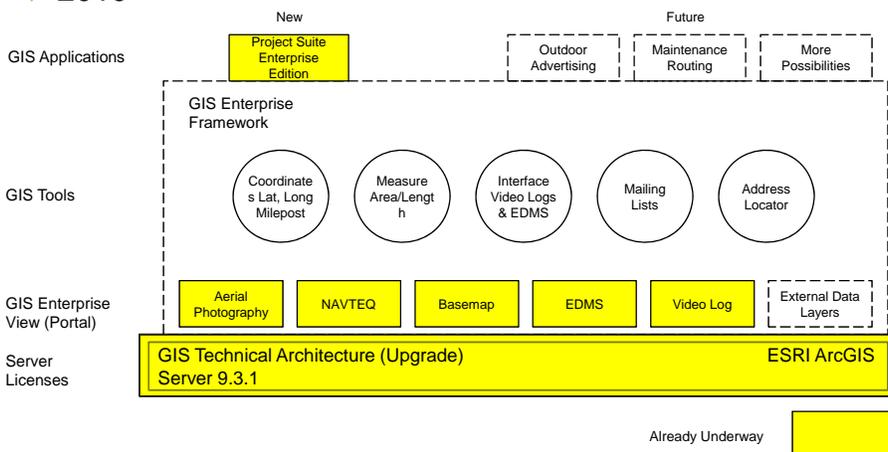
- Services Oriented Approach

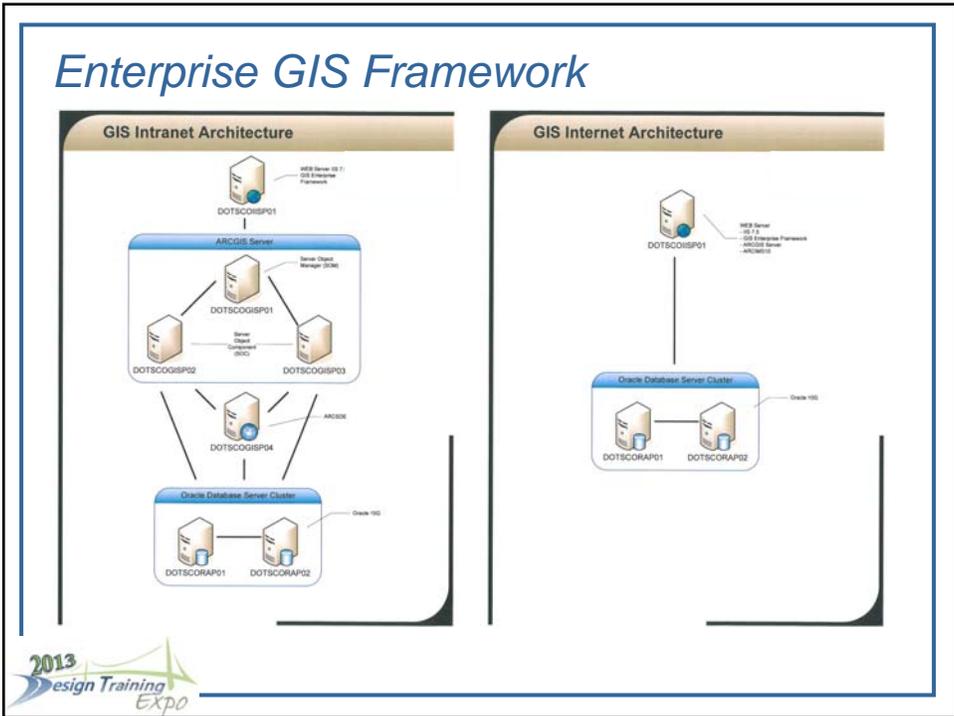
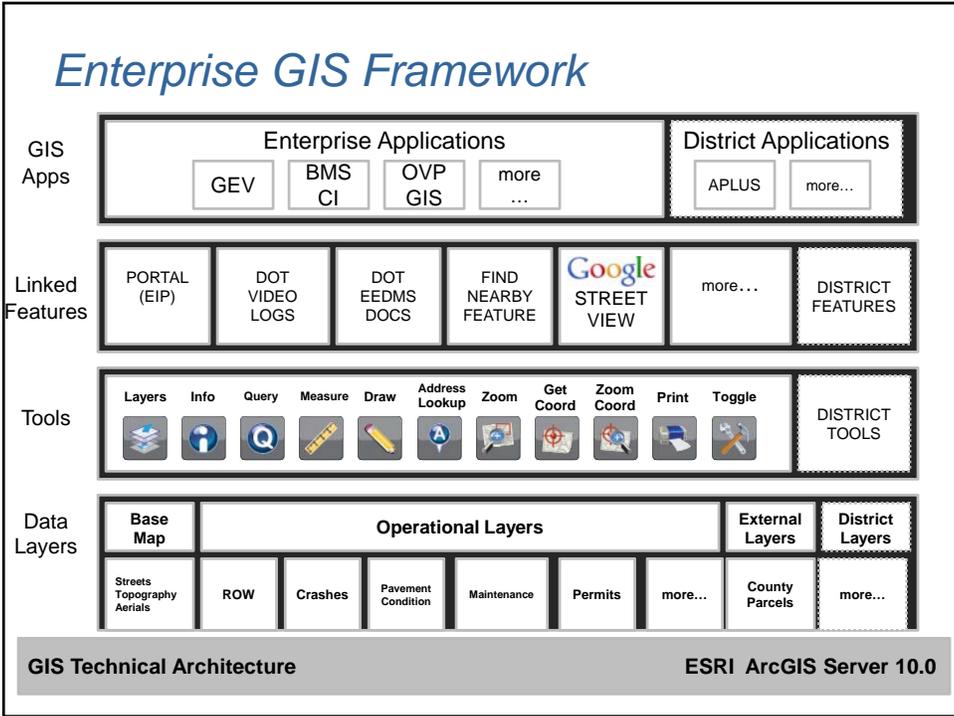
- An approach to architecture design which separates functions into distinct units, or services, that developers make accessible over a network in order to allow users to combine and reuse them in the production of applications



Enterprise GIS Framework

◆ 2010





Enterprise GIS Framework

- ◆ Enterprise GIS Framework
 - The application architecture upon which all Enterprise GIS applications will be built.
- ◆ GIS Embeddable Framework
 - The application architecture which enables a GIS application built on the Enterprise GIS Framework to be embedded within a business web application (examples later in presentation).
- ◆ GIS District Framework
 - District implementation of the Enterprise GIS Framework.



GIS Enterprise View (GEV)

- ◆ The **FIRST** GIS web application built on the Enterprise GIS Framework.
- ◆ The GEV is NOT the Enterprise GIS Framework
(big time misconception!)
- ◆ The GIS Enterprise View (GEV) application lets you view, query, and analyze the department's spatial data. The application contains Safety, Work Program, RCI and more enterprise systems data.
- ◆ The application also links to other enterprise wide systems such as PSEE, EIP, and Video Log based spatial data.



GIS Enterprise View (GEV)

◆ How do I get to it?

- **Internal use only**

- Direct link:

<http://gisintra.dot.state.fl.us/GISFramework/Default.aspx?appld=gev>

- GIS Enterprise View Computer Based Training:

<http://cbt.dot.state.fl.us/ois/GEVCBTs/>



GIS Enterprise View (GEV)



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Offices and People

- [Central Office Subject Phone Directory](#)
- [District Office Information](#)
- [Employee Benefit Fund](#)
- [Employee Phonebook - DOT](#)
- [Employee Phonebook - State](#)
- [Employee Recognition Program](#)
- [Executive List](#)
- [FSECC - FDOT Clothing Line](#)
- [Office Web Sites](#)
- [Organization Chart](#)
- [People First Initiative](#)
- [People First Logon](#)



GIS Enterprise View (GEV)

[CPQ \(Contractor Pre-Qualification\)](#) [more on CPQ](#)
EDMS (Electronic Document Management System) [more on EDMS](#)
[Central Office](#) [District 1](#) [District](#)
[District 3](#) [District 4](#) [District](#)
[District 6](#) [District 7](#) [District](#)
[Turnpike \(HQ-Turkey Lake\)](#) [Turnpike \(Operations - Pompano\)](#)
[EIP \(Enterprise Information Portal\)](#) [more on EIP](#)
[Eplause](#) [more on Eplause](#)
[EOC](#) [more on EOC](#)
[EPS - Employee Performance System](#) [more on EPS](#)
[ERC - Electronic Review Comments](#) [more on ERC](#)
[eSIS \(Enterprise Strategic Intermodal System\)](#) [more on eSIS](#)
[FAMS \(Federal Authorization Management System\)](#) [more on FAMS](#)
[FDOT Service Desk](#) [more on FDOT Service Desk](#)
[FDOTracker](#) [more on FDOTracker](#)
[Financial Project Search](#) [more on Financial Project Search](#)
[FIRM \(Facilities Inventory Reporting & Maintenance\)](#) [more on FIRM](#)
[GCH \(GIS Clearinghouse\)](#) [more on GCH](#)
[Internet View](#) [intranetView](#)
[GIS Enterprise View](#) [more on GIS Enterprise View \(GEV\)](#)
[IRR \(Information Resource Request\)](#) [more on IRR](#)
[IRR Web Search](#) [more on IRR Web Search](#)
[LAPIT \(Local Agency Program Information Tool\)](#) [more on LAPIT](#)
[LDOC \(The LearningDoc\)](#) [more on LDOC](#)



GIS Enterprise View (GEV)


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GIS Enterprise View (GEV)



FDOT Enterprise Information Portal

Portal Search: [Help](#)

Perspectives: Executive & Department Portal Information & Training Strategic Intermodal System Asset Management

<p>Contracts</p> <p>Planning</p> <p>Posted/Reference Materials</p> <ul style="list-style-type: none"> DBE on Federal Contracts List - Menu Minority Business Enterprise Reports Time Report Reports Login <p>Web Applications</p> <ul style="list-style-type: none"> Consultant Inv. Trans. Sys. Login (CITS) Contract Information & Monitoring (CIM) Enterprise Application Menu <p>Department Offices</p> <ul style="list-style-type: none"> Computer Equal Opportunity 	<p>Portal Resources</p> <ul style="list-style-type: none"> Contract Search e-Document Search Financial Search GIS Enterprise View (New) GIS Enterprise View (Original) Multimedia Search (DOTube) NEW! GIS Enterprise View CBT Project Search Vendor Search <p>Queries</p> <ul style="list-style-type: none"> Alternative Contract Reporting Construction Contract Completeness Rpt. Construction GIS Queries 	<p>Financial</p> <p>General Links</p> <p>Portal Resources</p> <ul style="list-style-type: none"> Contract Search e-Document Search Financial Search GIS Enterprise View (New) GIS Enterprise View (Original) Multimedia Search (DOTube) NEW! GIS Enterprise View CBT Project Search Vendor Search <p>Queries</p> <ul style="list-style-type: none"> Alternative Contract Reporting Construction Contract Completeness Rpt. Construction GIS Queries
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Enterprise Information Portal Feedback
or FDOT ServiceDesk@fdot.state.fl.us





GIS Enterprise View (GEV)



Home | Videos | Real-World Solutions | System Tools CBTs | Resources | Infonet

GIS Enterprise View (GEV) can enhance day to day business decision-making by providing access to a wide array of transportation related data, easy to use GIS tools, and an intuitive application interface. This tool makes it easy to query and analyze information across all business areas in the Department.

Understanding how this technology can enable your work processes will help you to better fulfill the Department's mission critical functions. Please take a few moments to review additional GIS training modules and try GEV for yourself.

 <p>Overview Videos</p> <p>These short and informative videos explain GIS, or Geographic Information Systems, to help you understand the core technology GEV uses to function. This vital technology is delivered seamlessly within GEV, however, a basic understanding of GIS will facilitate your use of the GEV application.</p> <p>View Videos</p>	 <p>How to use GEV Tools</p> <p>Learn the tools of the trade with these Computer Based Training modules. Each lesson provides the foundation you need to make GEV work for you. Lessons cover each of the tools at your disposal and the GEV workspace. Be sure to view these and the Real-World Solutions to harness the power of GIS Technology.</p> <p>Learn Tools</p>	 <p>Real-World Solutions</p> <p>Get the most of the GIS Enterprise View application by seeing first-hand the power and robust nature this application has to offer. Take a tour through several Real-World solutions that show how to really take advantage of GIS technology to make your tasks easier, more effective, and more productive.</p> <p>Understand GEV</p>
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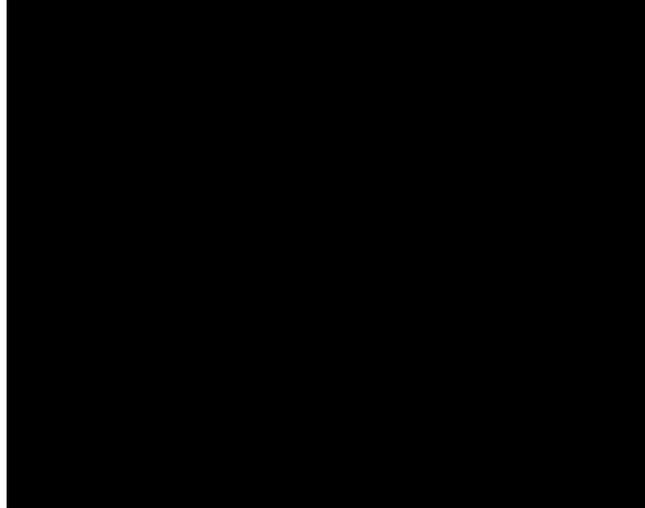
[NEW! GIS Enterprise View Application](#)



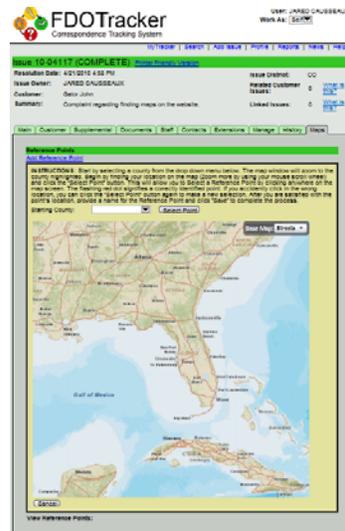
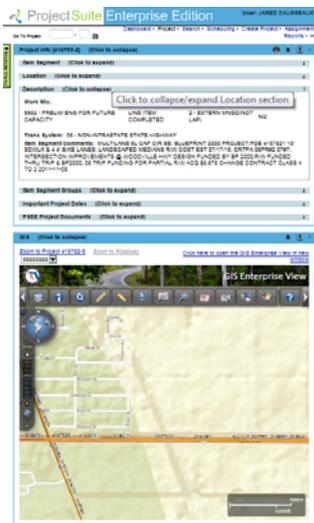

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Demonstration



Embeddable Framework



What's Next

- ◆ 2013 GIS Strategic Plan (*pending approval*)
 - Increase GIS presence on the internet by creating and maintaining a public facing portal for Department GIS resources
 - Research and recommend GIS software licensing options that provide access to GIS tools at the right level to those who need it, in the most cost-effective manner.
 - Explore requirements needed to implement internet technologies such as ESRI's ArcGIS Online



What's Next

- ◆ 2013 GIS Strategic Plan (*pending approval, cont.*)
 - Explore and adopt mobile devices or mobile mapping capabilities
 - Adopt interoperability standards for GIS data to be imported/exported to other spatial data formats (i.e. CADD).
 - Create documentation and/or procedures for consultant development on GIS web applications via the GIS Enterprise Framework
 - Promote the awareness, education and marketing of FDOT GIS resources through Department GIS user groups.





Introducing FDOT's New Geographic Information System:

- ▶ Increase Productivity
- ▶ Enhance Decision Support
- ▶ Use Map Layers of Data for Analysis
- ▶ Run Queries to Isolate Data of Interest
- ▶ Use GIS Tools to Navigate Data Quickly

Questions?

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